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HEARINGS

BEFORE



COMMITTEE ON NAVAL AFFAIRS OF THE
HOUSE OF REPRESENTATIVES

ON

ESTIMATES SUBMITTED BY THE
SECRETARY OF THE NAVY

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[No. 1.]

**COMMITTEE ON NAVAL AFFAIRS,
Monday, December 8, 1913.**

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL VICTOR BLUE, CHIEF OF
BUREAU OF NAVIGATION.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Blue, Chief of the Bureau of Navigation.

Admiral, I notice that in the bill there is not very much new language or new provisions under your bureau. On page 17, in the paragraph "Transportation," the language is the same until you get to the amount, and I see you are increasing the appropriation from \$825,000 last year to \$850,000 in the present bill?

Admiral BLUE. Yes, sir.

The CHAIRMAN. Will you please state to the committee the reasons and the necessity for the increase?

Admiral BLUE. In determining the estimate under this appropriation, the total number of enlisted men in the Navy during previous years considered in connection with the total expenditures for those years, and then considering the total number of men to be in the service during the year 1915, it appeared that \$900,000 would be needed under this appropriation, but the bureau is of the opinion that this amount could safely be reduced to \$850,000, as it contemplates making transfers of enlisted men by public conveyances to a greater extent than has been done in the past. The appropriation for 1913 was \$800,000, and it appears at the present time that there will be a deficiency in this appropriation of \$71,193.72.

In explanation of the deficiency it might be stated that in view of the fact that there was expended during the fiscal year 1912, \$940,000, approximately this amount on an average increase would ordinarily be required for the fiscal year 1913. The bureau had in view at that time, however, a plan of utilizing naval vessels for the transportation of enlisted men instead of commercial vessels which had received approximately \$50,000 from the department during the preceding year. Conditions were such, however, that the vessels which are used at times as transports could not be spared for this duty. A further explanation in regard to that deficiency is the fact that last year when the naval rendezvous was held at New York advantage was taken of enlisting temporarily a great many men of the naval militia of the States bordering on the Great Lakes, who were transported to New York and returned home. That in itself cost \$40,000.

On another occasion it became necessary to fit out hurriedly the *Montana* and *Tennessee* for service on the east coast of the Mediterranean. Men had to be transferred very quickly by rail to reach the ships in time. That cost over \$6,000. There is \$46,000 which can be accounted for. It might be said, however, that this is a little beyond the usual procedure. The present indications are that the entire complement of 51,500 men will be in the service during the year 1915, which means that it will cost more to transport the enlisted personnel than it has in any other year. It is estimated that the amounts to be expended under the various headings of this appropriation will be as follows: For travel allowance of enlisted men discharged on account of expiration of enlistment, \$375,000; transportation of enlisted men and apprentice seamen at home and abroad, with subsistence and transfers en route, or cash in lieu thereof, \$360,000; transportation to their homes, if residents of the United States, of enlisted men and apprentice seamen discharged on medical survey, with subsistence and transfers en route, or cash in lieu thereof, \$85,000; transportation of sick or insane enlisted men and apprentice seamen to hospitals, with subsistence and transfers en route, or cash in lieu thereof, \$13,000; apprehension and delivery of deserters and stragglers, \$16,900; and for railway guides and other expenses incident to transportation, \$100.

Then, again, it is proposed this year to take in an appropriation which has heretofore been given to the Bureau of Medicine and Surgery for the transportation home of remains of deceased officers and men.

The CHAIRMAN. If we consolidate the transportation and burial of the dead, "Contingent, Bureau of Medicine and Surgery," could that be transferred from "Contingent, Bureau of Medicine and Surgery," to "Transportation, Bureau of Navigation"?

Admiral BLUE. I think it would be better to have the whole question of transportation come under one appropriation, and I think possibly it would be better to handle that question in the Bureau of Navigation.

The CHAIRMAN. How much would you reduce the appropriation, "Contingent, Bureau of Medicine and Surgery," if we took that item out of the Bureau of Medicine and Surgery and transferred it to the Bureau of Navigation?

Admiral BLUE. I think that item, if I remember it, amounts to about \$15,000. It is an item under "Transportation of remains," and not under "Contingent."

The CHAIRMAN. On page 65 there is the item:

Transportation of remains: To enable the Secretary of the Navy, in his discretion, to cause to be transferred to their homes the remains of officers and enlisted men of the Navy and Marine Corps who die or are killed in action ashore or afloat, and also to enable the Secretary of the Navy, in his discretion, to cause to be transported to their homes the remains of civilian employees who die outside of the continental limits of the United States, \$15,000.

Could that be transferred and be consolidated under your bureau?

Admiral BLUE. Yes, sir.

The CHAIRMAN. If that is transferred, would this increase of \$25,000 cover that?

Admiral BLUE. No, sir; we ought to add that to it. The estimate was made without considering that item.

The CHAIRMAN. Now, then, the amount that is used on page 64, for "Care, transportation, and burial of the dead," was not included in your estimate of \$850,000?

Admiral BLUE. Not that particular item. I referred to another one.

The CHAIRMAN. Which other one?

Admiral BLUE. The one you just read of \$15,000.

The CHAIRMAN. Did you include the \$15,000 in your \$850,000 estimate?

Admiral BLUE. No, sir. That \$15,000 should be added to the estimate, making it \$865,000.

The CHAIRMAN. If we transfer the language on page 64, "Care transportation, and burial of the dead," should we reduce the appropriation for "Contingent, Bureau of Medicine and Surgery," an equivalent amount and add it to the Bureau of Navigation, the sum which has heretofore been paid by "Contingent, Bureau of Medicine and Surgery"?

Admiral BLUE. That particular item I have not given any thought to, but believe it should be continued under the Bureau of Medicine and Surgery, as it is best for that bureau to look out for the burial of the dead and the local transportation connected therewith.

Mr. ROBERTS. What part of the navigation appropriation should then be increased?

Admiral BLUE. Transportation, sir.

The CHAIRMAN. I will state to the committee that I have been informed, in investigating the matter, that in making appropriations for the various bureaus under the various paragraphs that it necessitates an immense amount of detailed bookkeeping, which adds materially to the cost in the department, and that if they were consolidated it would dispense with several clerks in the department.

Admiral BLUE. The Bureau of Navigation has charge of the transportation of all personnel. We have to handle that, anyhow.

Mr. HOBSON. And the dead?

Admiral BLUE. The Bureau of Medicine and Surgery looks out for burial of the dead.

The CHAIRMAN. That is a small matter.

Admiral BLUE. I would like to say in this connection that whenever an officer or man dies abroad, at sea, or anywhere the Bureau of Navigation is the one which is immediately notified. The question of the disposition of the remains is then taken up with the family of the deceased and directions given for shipment home. Correspondence to obtain all necessary information is carried on by two bureaus. In most cases it would appear simpler for the Bureau of Navigation to handle the subject. There are other cases, however, that could best be handled by the Bureau of Medicine and Surgery—such, for instance, as death due to contagious diseases, in which the sanitary laws of various countries might be involved, also deaths in hospitals.

Mr. HOBSON. Give you authority to take charge?

Admiral BLUE. To go ahead and transport the remains without loss of time. I would prefer, however, that this matter be not decided until after the hearing of the Surgeon General, who, no doubt, has good reasons for retaining the appropriation under his bureau.

The CHAIRMAN. It duplicates the work?

Admiral BLUE. It duplicates the work to a certain extent in two bureaus.

The CHAIRMAN. In the item under "recruiting," on page 18 the language is the same, but you have increased the estimate by \$20,000. The appropriation last year was \$130,000, and you are asking for \$150,000. Please explain the necessity for that?

Admiral BLUE. An increase of \$20,000 is submitted under this appropriation. The quota of enlisted men has steadily increased in recent years. The appropriation for recruiting has been the same since 1909, when the complement was 44,500; whereas the complement now is 51,500 enlisted men. This large increase in the complement will require additional efforts to keep it full and at the same time not to lower the standard for enlistment. The percentage of losses by discharge, desertions, deaths, medical surveys, and weeding out at training stations increases in proportion to the increased enlisted strength.

Mr. BATHRICK. Have you any data which indicates that the percentage of desertions is greater than it was?

Admiral BLUE. Yes, sir. I have some data which I will be very glad to let the committee have as soon as we come to it.

Mr. HOBSON. As to the question of the increase of both of the appropriations just passed, are they just about proportional to the increase in strength of the personnel?

Admiral BLUE. I should say they are approximately so.

Mr. HOBSON. Inevitable with the increase in numbers?

Admiral BLUE. Yes, sir.

The CHAIRMAN. How are you getting along with the appropriation of \$130,000?

Admiral BLUE. We ran a little short last year and expect a deficit in that item of about \$3,000; possibly a little over that amount.

The CHAIRMAN. You will have a larger enlistment next year?

Admiral BLUE. Yes, sir; we will. Recruits are coming in very fast. During the last month we had a net increase of 600, and I think before the 1st of March we will have filled up the 51,500 allowed under existing law.

Mr. HOBSON. To what do you attribute this recent increase in the enlistment?

Admiral BLUE. I attribute it to three or four things. One is the opportunity for foreign travel. I do not think, however, that is paramount. Another is the general publicity given to the Navy throughout the country, especially in regard to the educational advantages men will receive after enlisting, and also to what has been demonstrated by the department, that the enlisted men of the Navy will receive advancement and have a better chance to obtain commissions than they have had heretofore.

Mr. BUCHANAN. Have the educational facilities been improved over what they have been?

Admiral BLUE. Yes, sir. We have recently established facilities for education that we never had before. An elementary school system has been established at all training stations. A regular school is now part of the routine at these stations.

Mr. BUCHANAN. Has there been any policy established for education after they have enlisted and been taken away from the stations?

Admiral BLUE. We have a very comprehensive system that will be established throughout the Navy on the 1st of January. It has been practically all worked out. On every ship in the Navy there will be a school.

Mr. BATHRICK. With officers in charge?

Admiral BLUE. Yes, sir.

Mr. STEPHENS. I understood you to say that the increase in the number of enlisted men had amounted to about 600?

Admiral BLUE. Yes, sir; during the last month.

Mr. STEPHENS. What percentage is that of the ordinary enlistments, about?

Admiral BLUE. I have the figures on that subject, which will be given later.

Mr. BUCHANAN. Does the system which you have inaugurated contemplate compulsory education, or will it be left to the enlisted men?

Admiral BLUE. While it might be difficult to make it compulsory, still we will use pressure on the men to attend school, as well as give them every encouragement to go ahead with their educational work. We have ascertained that at the present time the correspondence schools are teaching something like 700 or 800 enlisted men in the service; and, on board every ship where men are receiving instruction by correspondence, we will have an officer detailed to assist them in that particular sort of instruction.

Mr. BATHRICK. Will their line of instruction be so guided that it will aid them to advance and receive commissions?

Admiral BLUE. Exactly; that is just what it is intended to accomplish. They will be taken through a course of studies, academic and technical, that will fit them for advancement through the various grades of petty officer and warrant officer. Special attention will be given to those who wish to study for a commission. The object is to increase the general efficiency of the enlisted personnel who make the Navy a life career. Incidentally, those who return to civil life will be all the better qualified for civil pursuits on account of having been in the Navy. That is our policy.

Mr. HOBSON. It makes a career for the enlisted man in the Navy?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. To return to the increase in number of enlistments, is it not a fact that more men in civil life come in on account of being out of employment?

Admiral BLUE. No, sir; the statistics do not show that. We have a system by which we can obtain, to a great extent, the reasons for most of the enlistments. At every training station, when the apprentice seamen arrive, each one is questioned as to what caused him to enlist; and it is rather surprising that, comparatively, only a few state that they enlisted in order to get a job.

Mr. BUCHANAN. Will not this system, when it is adopted, do away with the necessity of the enlisted man going to the expense of the correspondence school?

Admiral BLUE. It will, if they so choose; we will give them that opportunity.

Mr. BUCHANAN. You have a system that will take the place of the correspondence school and probably be an improvement?

Admiral BLUE. Yes, sir; in many instances. But we will not discourage individuals in pursuing special courses in correspondence schools; rather assist them.

Mr. STEPHENS. Returning to my question, I would like to know approximately how many men enlist monthly in the Navy?

Admiral BLUE. We are running about 1,700 to 1,800 enlistments a month.

Mr. STEPHENS. Your average is about 1,600 to 1,700 a month?

Admiral BLUE. Yes, sir; it is up to 1,800 now. It is increasing.

Mr. ROBERTS. Speaking about the reasons given by the apprentice seamen; of course, you enlist a great many men in the Navy who are not apprentice seamen, and in other branches, that do not go through your apprentice schools?

Admiral BLUE. Yes, sir; but the great majority of them on first enlistment go through the training schools.

Mr. ROBERTS. Do you ask all those men their reasons for enlisting?

Admiral BLUE. We have been asking only the recruits who are sent to the training schools. We enlist men for the mechanical branches and for the fireroom force, as well as men who have not any particular trade, but who wish to get into the Navy. After they go through the training school they can decide whether to go in the engine room or on deck. Many of the men in the engine-room force in the rating of coal passer go through the apprentice-seamen schools.

The CHAIRMAN. I notice in your report, on page 12, this statement:

All recruits are interrogated as to the methods which prompted them to enlist, the advertising methods and media seen by them, and the influence such advertising had upon them, etc. The answers to these questions are forwarded to the bureau from all recruiting stations at intervals and tabulated. The combined answers have contained a great deal of valuable information as a guide in placing advertising, preparation of copy, etc. A recent tabulation showed that the greatest influence in enlistments was the desire to see the world and travel, 876 men giving this as their reason for joining the Navy. In view of this fact it is predicted that enlistments will materially increase between now and the approaching cruise of the battleship fleet to the Mediterranean. The next highest number of answers was the recommendation of relatives or friends in the Navy, 748 giving that as their reason. The latter figures are very gratifying, showing that the men in the service as a whole are contented and are willing to voluntarily recommend the Navy to their friends at home. Five hundred and fifteen men joined with a desire to learn a trade; 481 to better themselves. Of the entire 5,381, only 318 stated they were out of work.

Admiral BLUE. Yes, sir. Those figures show that but few men enlist on account of being out of work.

Mr. TALBOT. What percentage enlisted because they wanted the navy life?

Admiral BLUE. No doubt a great majority enlist for that reason.

Mr. TALBOT. I was going to ask that question, but what Mr. Padgett read from your report satisfies me.

Admiral BLUE. That gives a general idea of the reasons for enlistment.

Mr. TALBOT. That gives me what I wanted.

The CHAIRMAN. On page 19 I notice that there is a proviso:

Provided, That authority is hereby granted to employ the services of an advertising agency in advertising for recruits under such terms and conditions as are most advantageous to the Government.

Have you made any change with reference to the agencies that have been doing this work for you?

Admiral BLUE. Yes, sir; we have made a change. We formerly employed a New York firm, and now we are using two agencies, one in New York and the other in Chicago, the Van Cleve agency in New York and the Clague agency in Chicago.

The CHAIRMAN. What has been the result of the change, whether beneficial and whether you have secured better results from the new agencies than from the old?

Admiral BLUE. The result has been very beneficial, and, as I said a while ago, the enlistments are coming along very rapidly.

The CHAIRMAN. Under the former method that you had, did you get your full quota of enlistments?

Admiral BLUE. No, sir.

The CHAIRMAN. Now you are approaching it?

Admiral BLUE. Now it looks as if we would get them within a few months.

Mr. BUCHANAN. What is the difference between the former and the present agencies?

Admiral BLUE. I do not know that there is very much difference in their methods, but the agency formerly employed did not give us the number of men that we thought we should obtain.

Mr. BUCHANAN. Are they private agencies, or does the department do this advertising itself?

Admiral BLUE. No, sir. These are advertising agencies who make a special business of placing advertisements. They do not get any pay from the Government, but they get a commission from the newspapers with which they place the advertisements. The cost, however, is the same to the Navy.

Mr. STEPHENS. Who writes the advertisements?

Admiral BLUE. They are written in the Bureau of Navigation under my supervision, and afterwards visé by the Secretary of the Navy, who takes special interest in them.

Mr. STEPHENS. They are all approved by your department before being placed in the newspapers?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. As I understood the chairman when reading from your report, you expected an appreciable increase in the enlistments on account of the coming cruise to the Mediterranean?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. That was before the cruise occurred?

Admiral BLUE. Yes, sir. There was a considerable increase after the cruise was planned and a still further increase after the ships went away.

Mr. BUCHANAN. Why give these private agencies a commission for doing something that the department practically does itself? You say you approve all of the advertisements, write them yourself. Could not the department save that commission by doing away with the agencies?

Admiral BLUE. If we should do away with the agencies, which now cost us nothing, we would have to have a special clerk, or maybe more than one, to look out for the correspondence with the various newspapers, in order to get this business done. By utilizing the agencies we are saved that additional expense.

Mr. BUCHANAN. The agencies do not do the work for nothing?

Admiral BLUE. They get a commission from the newspapers that publish the advertisements.

Mr. BUCHANAN. Could we not reduce the amount of the commission if the department did away with the agencies?

Admiral BLUE. As a rule the Government does not like to do business that way, even if it were practicable.

The CHAIRMAN. Last year and the year before last we took the matter up pretty fully in our hearings, and it was stated to the committee then that these agencies which had relations with the principal journals over the country were prepared to get better terms and better results than the department would, that they represent a number of various concerns and have connections with these papers, and by making a specialty of it they get better results.

Mr. LEE. Who has the contract at the present time?

Admiral BLUE. The Van Cleave Co. in New York and the Clague Agency in Chicago.

Mr. LEE. Who designates these agencies?

Admiral BLUE. They are designated by the department.

Mr. LEE. The Secretary?

Admiral BLUE. Yes, sir.

Mr. LEE. There is no competition of any kind?

Admiral BLUE. They are selected with a view to obtaining the best results.

Mr. LEE. I have had a great many inquiries in regard to the method of selecting the men to do the advertising or to handle that particular end of the business.

Admiral BLUE. Those firms are known to be able to do it, and can do it properly, as we want it done.

Mr. LEE. You know, yourself, that it is a big money-making business?

Admiral BLUE. Yes, sir; there is some money in it, no doubt, when handled in connection with other advertising business, but not very much if handled alone.

Mr. LEE. And, just as Mr. Buchanan says, the man who is lucky enough to get that business has a good thing. Is there not some way that other men who are making a business of handling that particular kind of work could have a chance to get some of the business?

Admiral BLUE. I think that the work should only be handled by firms who have well-established business connections and experience enough to handle it advantageously.

The CHAIRMAN. It is all in the hands of the Secretary?

Admiral BLUE. Yes, sir.

The CHAIRMAN. And any application can be addressed to him and receive consideration?

Admiral BLUE. Yes, sir.

Mr. LEE. I understand that; but it seems to me that certain people can get these little contracts at all times, and other people who are in the same line of business have no chance at all. It is like the head waiter in a big hotel—he practically has everything to himself so far as controlling the waiter system is concerned and collects all the tips—and I think the Government is giving these men a great chance, as Mr. Buchanan says. I think there should be some way of somebody else getting a chance to do some of the work.

The CHAIRMAN. The present Secretary has just made a change; he has taken it from the concern that had it for several years and divided it among two others.

Mr. ROBERTS. About what proportion of this \$150,000 which you ask for next year will go for advertising?

Admiral BLUE. I have a statement about that, sir. What the agencies make out of it does not really amount to very much, and it does not seem to me that it is worth while scrambling for.

The CHAIRMAN. Have you the whole advertising bill?

Admiral BLUE. Yes, sir. We estimate that of the entire appropriation \$30,000 will be used for advertising.

Mr. WILLIAMS. It is estimated from experience that by means of advertising through the agencies the Government gets it about as cheap or cheaper than if they did it directly?

Admiral BLUE. We would get absolutely the same rates from the newspapers if we did it directly, besides we are saved all the correspondence, which would require more clerical force. The agencies do the correspondence. What we do is this: When we want an advertisement placed we make it out in the bureau and send it to the agency, who looks out for the rest; we have no further care in the matter.

Mr. WITHERSPOON. They decide which papers to publish it in?

Admiral BLUE. The department decides that, depending altogether on what recruiting districts the advertisement is to appear in. The agencies place the advertisements in newspapers in those particular districts.

Mr. ROBERTS. It has been called to my attention that the amount expended for advertising last year was \$22,211.92.

The CHAIRMAN. The estimate this year is for \$30,000. Did you want the item under "Recruiting" on page 18, which is a part of the general transportation, included under this first item of transportation?

Admiral BLUE. There is one portion of the transportation for recruiting that I would like to have placed under the regular transportation; that is, for accepted applicants. In a recruiting district we have a headquarters station and several stations. When recruits are accepted at the substations they are sent to the headquarters station to be sworn in by the recruiting officer in charge of the district. Recruits are not enlisted until they take the oath, and the appropriation covering transportation of enlisted men can not be applied to pay their transportation from the substations to headquarters unless it is provided for in the act. Heretofore our transportation appropriation has not covered the cost of getting recruits from substations to headquarters, and I would like to have this item of expense included in the regular transportation estimate.

The CHAIRMAN. Accepted recruits?

Admiral BLUE. Yes, sir; accepted recruits, or rather accepted applicants for enlistment.

The CHAIRMAN. Where would you insert those words—in the first line under the Bureau of Navigation, "enlisted men and accepted recruits"?

Admiral BLUE. "Enlisted men and accepted applicants for enlistment."

Mr. ROBERTS. You now take them all down to the central examining station?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Some of those might be rejected, and yet the department would necessarily pay their expenses down to the examining station and back. If you use the words "accepted recruits," how will you care for those who might be rejected?

Admiral BLUE. From our experience, there are not many rejections after having once been accepted at the substations. They are not really in the Navy until they are sworn in by the recruiting officer. We have only one recruiting officer and one doctor at headquarters. The doctor is frequently sent to the substation to pass upon the physical condition of recruits before they are sent to headquarters to be sworn in. When sworn in they come under the regular transportation appropriation. Of course, we can not transport a man under the appropriation for transportation until he is actually in the service, and he does not become actually in the service until he is sworn in by the recruiting officer authorized by law to administer oaths.

Mr. ROBERTS. In other words, the proposition is to make the rejected recruits stand their own traveling expenses?

Admiral BLUE. The proposition is to have the appropriation apply to those who have been accepted at the substations and who need only to go to headquarters to be sworn in.

Mr. TALBOTT. After the doctor examines them and before they are sworn in you treat them as accepted recruits?

Admiral BLUE. Yes, sir; as accepted applicants. In some cases even before the doctor examines them.

Mr. TALBOTT. But you pay the expense; that is, after the medical examination?

Admiral BLUE. We pay the expense now, but the money comes out of the appropriation for recruiting and not out of that for transportation. It is only after they have been accepted at the substations that we will pay for their transportation under this appropriation.

Mr. ROBERTS. That is not just clear in my mind. You pay the transportation from what points to what points?

Admiral BLUE. I have a map here showing the recruiting districts. We pay the transportation from the substations to headquarters.

The CHAIRMAN. Under the existing conditions, out of the appropriation for recruits, when you notify a young man to go to a place for examination, you pay his traveling expenses from his home to the recruiting station, and if you reject him you pay his transportation back to his home?

Admiral BLUE. Not when we notify him, no, sir; only after he has applied at the substation, been examined, and tentatively accepted.

Mr. ROBERTS. You do not propose to pay the man's expenses under any conditions?

Admiral BLUE. Only after he has been accepted by the recruiting party.

Mr. ROBERTS. It is only when he comes and is finally sworn in and accepted you then pay his expenses from his home to the point where sworn in?

Admiral BLUE. His expenses are paid before he is sworn in. For instance, in Virginia Richmond is the headquarters. There is a substation at Roanoke, one at Charlotte, and one at Staunton. There are recruiting parties of petty officers at those substations, but the

recruiting officer's headquarters is at Richmond. The recruiting parties examine men who apply at the substations. After they are accepted they are sent to Richmond to be sworn in, and to be further passed upon, if necessary, by the recruiting officer and the doctor.

Mr. BATHRICK. And pay their expenses to Richmond?

Admiral BLUE. Yes, sir. We now pay their expenses out of the recruiting appropriation. Although they are not technically in the Navy during their transit to Richmond, they are accepted applicants for enlistment, and, with few exceptions, are acting in good faith with the Government.

Mr. BATHRICK. Suppose they are not accepted at Richmond?

Admiral BLUE. Then we have lost the amount of their transportation.

Mr. BATHRICK. Do you send them back home or are they stranded?

Admiral BLUE. If they are rejected at Richmond they are returned to the substation.

Mr. BATHRICK. If they come to Richmond, do you send them back to Roanoke?

Admiral BLUE. If rejected at Richmond they are sent back to Roanoke.

Mr. BATHRICK. You tell a boy in Roanoke, "We think you will do, and we will pay your expenses to Richmond," and after he gets up to Richmond you examine him and find out that he will not do, and then you tell him to get back to Roanoke the best way he can. Is that the way it is done?

Admiral BLUE. We pay his expenses back to Roanoke, unless he defaults and changes his mind about enlisting, in which case he must get back the best way he can.

Mr. ESTOPINAL. You have a doctor at the substation?

Admiral BLUE. As a rule the doctor is at headquarters, but he is frequently sent to the substations also if it is deemed advisable by the recruiting officer in charge.

Mr. ROBERTS. What you are really asking, if I get your idea, is to turn from the appropriation for recruiting the transportation of these accepted recruits over into the appropriation "Pay of the Navy, transportation"?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. In order to lighten the drain on your recruiting fund?

Admiral BLUE. To have all transportation come under the same head as well as lighten the drain on the recruiting fund.

Mr. ROBERTS. Would you lessen your estimate under "Recruiting" and increase the appropriation "Pay of the Navy, transportation"?

Admiral BLUE. I do not make any estimate to increase it; no, sir.

Mr. ROBERTS. If you are going to have that money turned over and ultimately paid out of "Transportation of the Navy," you certainly will have a larger fund for recruiting?

Admiral BLUE. Yes, sir; that is what we want it for.

Mr. ROBERTS. That is what you want to do?

Admiral BLUE. Yes, sir; besides putting the transportation under its proper head.

Mr. ROBERTS. You would have more money available out of the \$150,000 for recruiting purposes than you would have if you had to pay the transportation?

Admiral BLUE. Yes, sir.

Mr. TALBOTT. You have not increased the total amount?

Admiral BLUE. No, sir.

Mr. ROBERTS. What does the transportation of the accepted recruits amount to in the course of the year?

Admiral BLUE. It would amount to probably \$20,000, or a little more.

Mr. ROBERTS. That would be that much additional charge on "Pay of the Navy?"

Admiral BLUE. Not under "Pay of the Navy," but under "Transportation of enlisted men."

The CHAIRMAN. After you accept them and they are sworn in they are really enlisted men?

Admiral BLUE. Yes, sir.

Mr. BATHRICK. Is not your estimate of \$20,000 pretty low if you are recruiting these men at the rate of 1,200 or 1,500 a month?

Admiral BLUE. The average travel involved is not great. Of course, after they have once been sworn in they are enlisted men, and come under the regular transportation item anyway.

Mr. WILLIAMS. If there is a surplus in any particular item at the end of the year is it carried over and an allowance made for it?

Admiral BLUE. It reverts to the Treasury.

Mr. ROBERTS. You have asked for an increase of \$25,000?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Was that to cover this transportation of accepted recruits?

Admiral BLUE. We are not asking for the increase with that particularly in view.

Mr. ROBERTS. There are other things that will legitimately increase the appropriation?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. If you are going to increase the charge on transportation by \$15,000 or \$20,000 from your recruiting, are you going to have money enough with the \$850,000?

Admiral BLUE. I propose not to run over that amount, because the intention is to use Government transportation as far as possible in transporting the men.

Mr. ROBERTS. It is not desirable, of course, to have a deficit if you can avoid it?

Admiral BLUE. No, sir.

Mr. ROBERTS. My thought is that if you take out of the recruiting \$15,000 and add that to transportation you should increase the total of your appropriation to cover that?

Admiral BLUE. It is my intention to guard against exceeding the amount by making use of Government transportation. In sending men recently from New York, Newport, and Boston to Hampton Roads, to fill the complement of the fleet before it sailed to Europe, every one of them went by Government transportation. They might have been sent by rail, but that would have cost us money. It is the intention of the bureau to use this method at every opportunity, so as to avoid running over the amount asked for.

Mr. ROBERTS. I would like to ask the admiral if he has estimated the amount needed for the transportation of effects of deceased officers and enlisted men of the Navy. I understand you want that taken out of "Contingent" and put into this item, "Transportation."

That total is \$15,000. I was wondering if you could not reduce that by whatever was necessary for the transportation of effects of deceased officers and enlisted men and increase the other appropriation by the same amount.

Admiral BLUE. I will read how the estimate is made up for the contingent: Continuous-service certificates, \$800; discharges, \$50; good-conduct badges, \$587.50; medals for men and boys (including engraving), \$775; purchase of gymnastic apparatus, \$400; transportation of effects of deceased officers and enlisted men of the Navy, \$266. That is a small item. That is only a part of the estimate, unless you wish me to read the rest.

Mr. ROBERTS. I wanted to know whether it was sizable enough to take into account in reducing one and increasing the other.

Mr. BATHRICK. What is the estimate for "books for training apprentice seamen and landsmen"?

Admiral BLUE. That is \$4,845.50.

Mr. BATHRICK. That covers your new program of education?

Admiral BLUE. Not entirely. We expect to supplement that amount, if necessary, from the appropriation "Equipment of vessels."

The CHAIRMAN. Your next item is, "Gunnery exercises," and I notice that you have asked for an increase of \$15,000 in that item.

Admiral BLUE. Yes, sir.

Mr. ROBERTS. I notice that you have "transportation" in this item also?

Admiral BLUE. In regard to the estimate for gunnery exercises, the director of target practice, who is cognizant of that work, submitted to me an estimate of something like \$138,200 and I reduced it to \$115,000. I must say, however, that that was an arbitrary reduction based on the expenditures of last year.

Mr. BATHRICK. What were the representations made to you that led them to make this recommendation of \$138,000; why did they ask for it?

Admiral BLUE. One reason was that there will be four or five thousand more enlisted personnel competing for prizes during the fiscal year 1915 than in former years, and a larger amount of prize money will be necessary. The director of target practice stated that the total of \$138,200 for gunnery exercises is the minimum that should be considered. The amount appropriated for 1914, \$100,000, will force economy this year. The amount appropriated for this year is smaller than that appropriated for any year during the past 10 years. The following are the amounts actually expended for the several years: 1910, \$129,918.40; 1911, \$124,095.98; 1912, \$112,815.70, and 1913, \$114,210.46.

Mr. BATHRICK. In your estimation, what do you think will be the amount allowed for target practice?

Admiral BLUE. The reason I reduced the estimate—

The CHAIRMAN (interposing). This is not for practice, that is under ordnance. This is simply for prizes, trophies, and badges for excellence in gunnery exercises and target practice.

Mr. BATHRICK. This is not the appropriation for target practice?

The CHAIRMAN. Not at all.

Mr. BATHRICK. I understand.

The CHAIRMAN. This is simply for prizes, badges, and trophies.

Mr. ROBERTS. How much of this money is for the establishment and maintenance of shooting galleries, target houses, targets, and ranges?

Admiral BLUE. I will come to that in a moment. It is estimated that \$75,000 will be required for that purpose. That is in the estimate of the officer in charge of target practice.

Mr. ROBERTS. Can you explain to us just what is meant by the term "shooting galleries"?

Admiral BLUE. At every training station and at most of the navy yards we maintain, as far as possible, a target range. Some of these are under cover for use with the revolver and low-power rifles, and are utilized for giving elementary instruction to recruits as well as to the crews of ships visiting navy yards.

Mr. ROBERTS. Subcaliber practice?

Admiral BLUE. Yes, sir; not with the high-power rifles. At the aiming stations young men who have never handled a gun before are taught how to shoot.

Mr. ROBERTS. How many ranges does the department maintain for the high-power guns, from 200 yards up?

Admiral BLUE. One of the largest ranges is at Guantanamo, where there are 62 butts with ranges of 500 yards to 1,000 yards.

Mr. ROBERTS. I thought that was the Marine Corps range?

Admiral BLUE. No, sir; that belongs to the Navy, but, of course, it is used by marines. Then, we have a long range at Annapolis, one at Puget Sound, and one at Mare Island. These are the four principal ranges, where long-range shooting may be done. At all stations we have short ranges and galleries which we maintain. These are maintained by the commandants of the stations from allotments out of this appropriation. Some of these are under cover. Then, we have also at some stations the self-scoring target, which is very useful and convenient for instruction purposes. It is quite new and has been favorably reported on. They cost about \$1,500 apiece, and have electrical attachments which register the hits at the place of the person firing. For instance, a man fires at a distance of 300 yards; the apparatus immediately indicates the point hit, thus permitting him to correct his aim for the next shot, etc. With the old system men lying behind the butts in front of the target would mark the hits by means of a disk on the end of a long rod.

Mr. WITHERSPOON. How much of this money do you spend for prizes, badges, and trophies?

Admiral BLUE. The estimate is \$42,200.

Mr. WITHERSPOON. Do you think it makes the men become more experienced and skillful to offer them prizes; and if so, what do you base that on?

Admiral BLUE. I think it does.

Mr. WITHERSPOON. Why?

Admiral BLUE. It gives them a substantial reward to strive for.

Mr. WITHERSPOON. Have you ever tried it without giving them prizes?

Admiral BLUE. We have been giving them prizes for excellence in great-gun practice for the last 8 or 10 years, and it has worked beautifully. Before the Spanish War we gave prizes for small-arms shooting, but not for great guns. Efficiency in great-gun practice has increased probably 1,000 per cent since then.

Mr. WITHERSPOON. I found when in Panama that the marines were doing a great deal of practice down there and were becoming very expert, I am told, in shooting. Did they get prizes for that?

Admiral BLUE. That is allowed the marines as well as the sailors.

Mr. WITHERSPOON. Out of this \$115,000?

Admiral BLUE. This does not go to the marines.

Mr. WITHERSPOON. Is there a separate paragraph in this bill for prizes to the marines?

Admiral BLUE. Those come under the Marine Corps appropriation. This estimate has nothing to do with the Marine Corps estimates.

Mr. WITHERSPOON. Is there a provision to appropriate money for prizes to them in this bill?

Admiral BLUE. Most likely there is, but not in my estimates.

Mr. WITHERSPOON. You do not know whether there is in the bill or not?

The CHAIRMAN. If you will turn to the top of page 100, you will see the item:

Purchase and marking of prizes for excellence in gunnery and rifle practice, good-conduct badges; medals awarded to officers and enlisted men by the Government for conspicuous, gallant, and special service.

That is under the Marine Corps.

Mr. WITHERSPOON. I remember when I was a boy at college they used to have a great many prizes and honors offered for the best scholarship, and I understand that at the college where I was educated they have abolished that. They came to the conclusion that it does not make better scholars out of young men. I want to understand, if I can, whether this is just a waste of money or whether it actually makes them more interested and they become more skillful. If it does I am in favor of it, and otherwise I am not.

Admiral BLUE. I believe it does, sir.

Mr. ROBERTS. Do not the men get some increase in compensation for their skill in gunnery and small arms?

Admiral BLUE. Yes, sir; they do.

Mr. ROBERTS. How much is estimated for hiring established ranges, and I want to ask you further just how that hiring is done?

Admiral BLUE. There is a range up in Massachusetts that was hired this last summer for the use of the rifle team that was practicing to go out to Ohio and engage in the international shooting match. We had some 4 or 5 officers and 25 or 30 men who belonged to that team. The director of target practice made some arrangement with the rifle club that owned the range. I do not think it amounts to very much. This item is simply to cover little things like keeping the range in repair while our men are using it.

Mr. ROBERTS. What proportion of the total amount estimated?

Admiral BLUE. The director of target practice estimates \$5,000, out of this total, but I believe that \$5,000 will more than cover it.

The CHAIRMAN. The \$5,000, if I understand, is a part of the \$138,000?

Admiral BLUE. Yes, sir. I reduced it to \$115,000 because last year they got along on \$114,210. It was reasonable to suppose that \$115,000 would be enough.

Mr. ROBERTS. What part of this appropriation is for transportation of civilian assistants and equipment to and from ranges; what is the estimate for that?

Admiral BLUE. The \$5,000 estimate is to cover all of that, hiring established ranges, and for transportation of civilian assistants and equipment to and from ranges.

Mr. ROBERTS. That was the estimate of the ordnance officer who reported?

Admiral BLUE. The director of target practice.

Mr. ROBERTS. That makes a total of \$122,000 for the three items mentioned in the particular language here, and if we only appropriate \$115,000 there will be \$7,000 more estimated than we appropriate. Where will the \$7,000 come from, out of what item; out of "Prizes, trophies, and badges," "Establishment and maintenance of shooting galleries," or "Hiring established ranges?"

Admiral BLUE. It will be taken out of maintenance. I would not have the amount for prizes too small.

Mr. ROBERTS. If you estimate \$42,000 for prizes, trophies, and badges, and \$75,000 for the establishment and maintenance of shooting galleries that is \$2,000 more than we are asked to appropriate?

Admiral BLUE. Yes, sir. The director of target practice makes up the \$138,000 by \$3,000 on another item, \$13,000 on still another for collecting, classifying, compiling, and publishing results, and \$6,500 on still another item.

The CHAIRMAN. You made your estimate upon the expenditures of last year?

Admiral BLUE. Yes, sir; to a certain extent they were based on the expenditures for last year.

The CHAIRMAN. And not upon the estimates submitted by the inspector of target practice?

Admiral BLUE. No, sir; not entirely, but due consideration was given his estimate.

Mr. ROBERTS. Can you tell us what was expended last year for badges, prizes, and trophies?

Admiral BLUE. \$33,248 was spent last year. The director of target practice estimated that item for next year \$42,000. I estimated \$38,000. He estimated for establishment and maintenance of ranges, \$75,000. My estimate for that item was \$59,000. His estimate for hiring ranges, etc., was \$5,000; mine was \$2,000. This explains the cut of \$23,000 on his estimates. We have plenty of small ranges, but we ought to have one big range on the Pacific coast somewhat similar to the one at Guantnamo.

Mr. WITHERSPOON. When the battleships engage in target practice, they give prizes to those who are superior?

Admiral BLUE. Yes, sir; they do. That is where a considerable amount of this money goes. For instance, the turret crew that makes the best record in the fleet will receive a substantial reward for excellence in gunnery.

Mr. WITHERSPOON. Do you think it would be wise to extend that principle to the admirals, captains, commanders, and all other officers that discharge their duties?

Admiral BLUE. No, sir; I do not think it would.

Mr. WITHERSPOON. What is the difference?

Admiral BLUE. Well, for instance, the enlisted men of the Navy are many of them young men with little pay, and to them a money reward naturally has its attractions.

Mr. WITHERSPOON. Young men discharge their duties as well as old men, without being given prizes.

Admiral BLUE. I hardly think it would be seemly to offer prizes to officers in order to encourage them to be zealous in the performance of duty.

Mr. ROBERTS. The officers have a fixed status in the Navy for life?

Admiral BLUE. Yes, sir. The enlisted men are only in 4 years, or 8, or 12 years, as they elect. Whenever a gun crew excels, wins the prize, they wear on their uniform a letter "E." The men are very proud of that distinction and would not take anything in the world for it.

Mr. ROBERTS. And it is painted on the turret?

Admiral BLUE. Yes, sir; and on the guns; and, in the case of steaming exercises, on the smokepipe of the ship.

The CHAIRMAN. That is a great stimulus to them?

Admiral BLUE. Yes, sir.

(Thereupon, the committee adjourned to meet to-morrow, Tuesday, December 9, 1913, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Tuesday, December 9, 1913.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL VICTOR BLUE, CHIEF
BUREAU OF NAVIGATION—Continued.**

The CHAIRMAN. I believe we left off on page 20, "Steaming exercises." There is no change in that amount and the language is the same until we reach "Outfits on first enlistment," page 21, and the language is the same, but the amount is increased \$3,400. Please tell us the necessity for that increase, Admiral.

Admiral BLUE. This estimate shows an increase of \$3,400 over the amount appropriated for the fiscal year 1914. This amount is arrived at by estimating the number of first enlistments which will be made during this fiscal year and multiplying it by \$60, the amount allowed each man for clothing upon his first enlistment.

The CHAIRMAN. It is just a question of mathematical calculation as to the number of enlistments?

Admiral BLUE. Yes, sir.

Mr. STEPHENS. What constitutes a first enlistment?

Admiral BLUE. The first time a man enters the service.

Mr. STEPHENS. How long has he to remain in the service?

Admiral BLUE. He enlists for four years.

Mr. STEPHENS. If a man enlists and remains three or four weeks, can he then be rejected and still have it claimed that that was an enlistment, that he served his first enlistment?

Admiral BLUE. As soon as he is enlisted he is furnished with an outfit which, under the law, can not again be given him. If he goes out of the service for any reason he can not get another outfit if he should reenlist.

Mr. STEPHENS. How long does he have to serve in the first enlistment?

Admiral BLUE. He enlists for four years, but if he is discharged for any reason before the expiration of that period he has had his first enlistment.

Mr. STEPHENS. Are there any circumstances under which a man is refused or is not given the \$60 worth of outfit?

Admiral BLUE. No, sir. If he is accepted—that is, on his first enlistment—he is always given the outfit, or at least he is credited with the amount on the books of the paymaster, and he draws the amount of clothing necessary for his immediate needs. He may not draw all of it at once, but he has credit for it on the books of the paymaster.

Mr. ROBERTS. And that lasts him until he uses it?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. He might not use up the last of the \$60 until the end of the four years?

Admiral BLUE. I doubt that. Part of the outfit may last for years. The clothing that they require will soon take all of the amount allowed.

Mr. ROBERTS. I put it in that way to illustrate that the \$60 is to his credit until he draws it out.

Admiral BLUE. Yes, sir.

Mr. ROBERTS. And that might be a week or a year.

Admiral BLUE. In an exceptional case it might take a year.

Mr. WITHERSPOON. What does an outfit include besides clothing, anything?

Admiral BLUE. It includes his clothing, toilet articles, etc.

Mr. WITHERSPOON. How long do they usually keep this credit? I mean, how long does it take the \$60 to be exhausted in clothing that they have to have?

Admiral BLUE. We consider that it ought to last him one year, approximately; and in case of some articles even longer.

Mr. WITHERSPOON. After that, do they buy their own clothing?

Admiral BLUE. Yes, sir. When they want clothing they have to buy it from the paymaster; that is, sign for it and have it charged against their accounts.

Mr. WITHERSPOON. And they get about \$18 a month?

Admiral BLUE. The apprentice seamen at the training stations get \$16 a month and rations. When they go aboard ship they are made ordinary seamen or coal passers and get from \$19 to \$22 a month besides their rations.

Mr. WITHERSPOON. After the first year it would take about three months of their wages to buy their clothing, if it takes \$60 a year?

Admiral BLUE. It depends altogether on the man. I have seen some men who take care of their clothing and who are economical, at the same time appearing well and decently dressed. I should say they spend very much less than three months' pay a year; in fact, about two months' pay a year on clothing, and possibly less than that. There are others just the reverse of this. It is all in the

personality of the man. Some of them never learn to take care of their clothing.

Mr. WITHERSPOON. What is the reason why the Government should furnish them the clothing the first year, and they furnish it themselves after that, what is the reason of distinguishing between the first and subsequent years?

Admiral BLUE. The reason, so far as I know, is economy to the Government.

Mr. WITHERSPOON. If you are going on the theory of economy, it would be more economical not to furnish it to them in the first year?

Admiral BLUE. Yes, sir; but, under those conditions, we would have them without any clothing or any money to start with. We enlist the man and when he goes to the training station, he may not have any money, and hence the necessity of either lending him the clothing or giving it to him.

Mr. WITHERSPOON. This is just to start him off?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. And it is also an inducement to enlist?

Admiral BLUE. Yes, sir.

Mr. BUCHANAN. What is a minority enlistment?

Admiral BLUE. Up to the age of 21.

Mr. ROBERTS. I want to ask the Admiral about the aviation appropriation. I notice, Admiral, that you are only asking for \$10,000, the same as last year.

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Does that come immediately under you, I mean the subject of aviation?

Admiral BLUE. The experiments in aviation come under the Bureau of Navigation. The question of building aeroplanes and the material parts of them come under the Bureau of Steam Engineering and the Bureau of Construction and Repair.

Mr. ROBERTS. That is simply for the personnel of aviation?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Do you think that we are going ahead fast enough or too fast?

Admiral BLUE. No, sir; I do not think we are going ahead too fast, but we expect to go ahead faster in the near future. The department has recently appointed a board to study and report upon the whole subject of aeronautics. An officer was sent to Europe to study and report upon conditions and progress there. We find that we are somewhat behind European nations in the development of aeronautics. We hope soon to press ahead and get into the first rank with the rest of them.

Mr. ROBERTS. Are you aware of the number of machines, dirigibles and heavier than air in the English, French, and German nations used for war purposes?

Admiral BLUE. I know they have a great number, but I do not know the exact number.

Mr. ROBERTS. I have not in mind the exact figures, but I think that England has 200, Germany 400, and France 600, and we have in the Navy 6. I do not know how many we have in the Army not many more. Do you think that we should go ahead faster?

Admiral BLUE. I think we should go ahead faster.

Mr. ROBERTS. Have you observed what seems to be holding the Navy back?

Admiral BLUE. As a rule we are very conservative and prefer to go slowly until we have reached a stage when there is little or no doubt about the outcome of a proposition. Situated near each other as the European nations are, one would naturally expect them to have many more air craft than we, and consequently more experience in the development of them. What we have in the aeroplane line is up to date but few in number. The best engines for motive power must be purchased abroad. We have no dirigibles or balloons.

Mr. ROBERTS. Do you not think that aviation has gone so far that it is time for us to jump in and catch up?

Admiral BLUE. Yes, sir; I think it is time to jump right in. It is the policy of the department now to do everything possible in that direction.

Mr. ROBERTS. Is \$10,000 going to be enough for the next year?

Admiral BLUE. I only asked for as much as we had last year. My part in it is very small. The \$10,000 is intended to cover only the incidentals connected with the training of the personnel. The material bureaus will submit estimates for new construction.

The CHAIRMAN. This \$10,000 was put in the bill to look after some little minor repairs and little things of that kind, and under the Bureau of Construction and Repair and the Bureau of Steam Engineering the substance of the whole matter is taken care of. They stated that \$10,000 for the little matters that they had under this bureau was sufficient.

Admiral BLUE. It is more incidental than anything else.

Mr. ROBERTS. Do you recall, Mr. Chairman, what the other appropriations are?

Admiral BLUE. I have not had an opportunity to read the bill.

The CHAIRMAN. Under the big appropriations we did not limit it. Under one appropriation it is about \$4,000,000—a part of that they can use—and under the other one the appropriation is \$5,000,000 or \$6,000,000, steam engineering. It is just one of the subjects embraced in the lump-sum appropriations.

Did you have any unexpended balance out of the \$800,000 last year?

Admiral BLUE. In 1913 the appropriation was \$900,000, and we had a balance of \$266,184.

The CHAIRMAN. The last year we cut it down to \$800,000.

Admiral BLUE. That is, this current year.

The CHAIRMAN. You do not know yet whether there will be a balance?

Admiral BLUE. No, sir.

Mr. WITHERSPOON. Do we have 12,000 new enlistments in the Navy a year?

Admiral BLUE. Yes, sir; it might be so stated. You take 50,000 men, and each one being enlisted for four years, every year on an average we change about one-fourth of them. They are not, however, all new men. Many of the old ones reenlist.

Mr. ROBERTS. That would come in the nature of things and would not take into account the courts-martial, those who die, etc.?

Admiral BLUE. That is right.

Mr. STEPHENS. The Government manufactures the seamen's clothing?

Admiral BLUE. Yes, sir; at the clothing factory in New York.

The CHAIRMAN. And it is furnished to them at cost?

Admiral BLUE. Yes, sir; practically. A small overcharge is made in order to guarantee the Government against loss.

Mr. ROBERTS. There are some other things in the outfit besides clothing?

Admiral BLUE. Yes, sir; toilet and shaving articles, which are necessary in the outfit. It may be well to include hereafter school-books in the outfit.

Mr. ROBERTS. Something was said yesterday about the desertions. I do not remember whether you gave us any figures on the desertions or told us whether they were increasing or decreasing.

Admiral BLUE. I have here this morning some figures on the subject. In 1908 there were 9 per cent of desertions; 1909, 5½ per cent; 1910, 4.77 per cent; 1911, 4.16 per cent; 1912, 3.58 per cent; and 1913, 3.78 per cent.

Mr. ROBERTS. A slight increase?

Admiral BLUE. Yes, sir; over last year, but a decrease over all other previous years.

Mr. WILLIAMS. How do you account for the reduction in the percentage of desertions?

Admiral BLUE. In great measure to the better class of men we are getting.

The CHAIRMAN. And also to the improved conditions?

Admiral BLUE. Yes, sir; to some extent.

Mr. ROBERTS. The service is being made more attractive to the men?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Has there been an increase in the pay of the men since 1908? When was the last increase?

Admiral BLUE. I think it was about that date.

Mr. ROBERTS. The increase was in the latter part of the Roosevelt administration?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. I wondered if that did not have some effect, also?

Admiral BLUE. It is very possible it did. There was a big falling off in desertions in 1909; but my experience with the men on board ship has been that some of them will desert for no apparent reason. No matter what the conditions are, some get discontented and go. Life on board ship does not appeal to every one.

Mr. ROBERTS. Have you any figures as to the percentage of reenlistments?

Admiral BLUE. Yes, sir; I have some figures on that. The percentage of men serving under reenlistment was during last year 35.33.

Mr. ROBERTS. How does that compare with prior years?

Admiral BLUE. The figure for 1912 was 32.22 per cent. There has been an increase of 3.11 per cent.

Mr. ROBERTS. Do you know how that compares with any other year, whether favorably or unfavorably?

Admiral BLUE. There has been an increase right along. It is even greater now than it was during the last fiscal year. In the

last four or five months we have been getting a greater number of reenlistments.

The CHAIRMAN. I have heard, I do not know whether it is accurate or not, that there has been a marked increase in the last six months in the number of trials by courts-martial for desertion. Is that true?

Admiral BLUE. I do not think it is. I have not the figures. Trials for desertion during the last few months cover offenses committed during a period extending back 5 or 6 years, and would not be a true indication of recent desertions.

The CHAIRMAN. Could you insert in the hearings the figures on the number of trials by courts-martial for desertion from July 1 to December, 1912, and then from January 1, up to December 1?

Admiral BLUE. Yes, sir. Convictions for desertion, July 1 to December 1, 1912, 209; July 1 to December 1, 1913, 276; January 1 to December 1, 1912, 539; January 1 to December 1, 1913, 646.

The CHAIRMAN. In the next item, "Maintenance of Naval Auxiliary," you are asking for the same amount as last year. I see that your expenditures for 1913 were \$744,305.70. Could this estimate be reduced, or are you increasing your auxiliaries?

Admiral BLUE. New colliers are being built every year, and although we may not have all of them in full commission, we will have to care for those ships and put some of them in reserve with reduced crews on board—

The CHAIRMAN. Do you not think that the \$800,000 could be reduced?

Admiral BLUE. I do not think it could, sir; because we will be adding to the number of colliers this year.

Mr. ROBERTS. I notice that you have in this paragraph the item of transportation. Could that be taken out and put into the one transportation item?

Admiral BLUE. This is somewhat different. It comes, however, under the Bureau of Navigation. The auxiliaries have civilian officers and crews, and we keep their accounts separate from those of the regular Navy. The Bureau of Navigation is allowed so much money a year to look out for the naval colliers, oil ships, and other auxiliaries. They have civilian officers and crews on board and we have to pay their salaries and subsistence. When a seaman is discharged we have to send him home. That expense does not come out of the transportation for the Navy, but from the appropriation we have for naval auxiliaries.

Mr. ROBERTS. Do you include anything besides the colliers?

Admiral BLUE. Yes, sir; the hospital ship *Solace* is under that class.

Mr. ROBERTS. And the new transport we have authorized would be called an auxiliary?

Admiral BLUE. The transport would be manned by officers and men of the Navy.

Mr. ROBERTS. You only figure as auxiliaries such craft as are officered largely or wholly by civilians?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. And any craft that is under the command of a naval officer with a naval crew you do not put in that category?

Admiral BLUE. No, sir.

The CHAIRMAN. The next item is, "Naval training station, California," and there is no change in the amount or in the language. Did you have any unexpended balance out of the \$70,000 last year?

Admiral BLUE. There was a balance of \$494.64.

The CHAIRMAN. The next item is, "Naval training station, Rhode Island," and there is no change asked in the language or amount. Did you have any unexpended balance for that?

Admiral BLUE. We had an unexpended balance of \$3,473. That is for the last fiscal year. I want to ask for the same amount this year, because we are establishing schools that we did not have before; and although we did have a balance, I thought it better that we not risk reducing the estimate.

The CHAIRMAN. On account of the school work you will need this amount?

Admiral BLUE. Yes, sir.

The CHAIRMAN. The next item is, "Naval training station, Great Lakes," \$98,457. The language is the same and the amount is the same. Did you have any unexpended balance last year?

Admiral BLUE. \$502.95.

The CHAIRMAN. As to the naval training station on the Great Lakes, what is the status of that now; to what extent it is being used?

Admiral BLUE. We are using it to a great extent in the training of apprentice seamen.

Mr. BUCHANAN. That is the station at North Chicago?

Admiral BLUE. Yes, sir.

Mr. STEPHENS. I was there about 10 days ago, and Capt. Clark told me that there were about 850 apprentice seamen in the institution.

Admiral BLUE. I look upon that station as very valuable to the bureau for the training of men.

The CHAIRMAN. Do you not consider it as one of the important stations?

Admiral BLUE. Yes, sir. I have here a little map showing where we enlist recruits in the various districts in the Central States. Many of these go to the Great Lakes Training Station.

The CHAIRMAN. We can not put the map in the record, but I would like for you to state just what country it serves, from what sections of the country the enlisted men go to the Chicago station?

Admiral BLUE. All enlisted men from the recruiting districts having as headquarters St. Paul, Milwaukee, Detroit, Indianapolis, St. Louis, and Des Moines go to the Chicago station. We have other districts, from which we find it cheaper to send men directly to Norfolk and to San Francisco rather than to Chicago, because eventually they are going aboard ships, and if we should send them to Chicago in the first instance it would cost more money in the end; but we try to keep the Chicago station supplied with as many as can be cared for.

The CHAIRMAN. How many have you at the Chicago station at the present time?

Admiral BLUE. At date of last report, November 29, there were 857.

Mr. ROBERTS. Please give us in the record the number that have passed through the Great Lakes station in the past year.

Admiral BLUE. Yes, sir. There were 1,515 who passed through last year.

Mr. WILLIAMS. How does the naval station on the Great Lakes compare with Norfolk, Rhode Island, and other training stations?

Admiral BLUE. Newport is the largest with a capacity of 1,900. Great Lakes can accommodate comfortably 1,800; Norfolk, 1,200; and San Francisco, 820.

Mr. WILLIAMS. What is the number at Newport and Norfolk?

Admiral BLUE. Newport, 1,196; Norfolk, 746; San Francisco, 541. We expect to have all stations full within a few months.

Mr. ROBERTS. May I ask you to extend that a little bit and give us the number that have passed through all the stations compared with the year before?

Admiral BLUE. Yes, sir. Newport, 1912, 5,295; 1913, 4,697. Great Lakes, 1912, 1,606; 1913, 1,515. Norfolk, 1912, 2,227; 1913, 1,895. San Francisco, 1912, 2,135; 1913, 1,937.

Mr. ROBERTS. As to the California station there is no proviso as to the amount of money that can be expended for "clerical, drafting, inspection, and messenger service." Why is that? Do we not put a limit on the amount that can be expended? We do on the Rhode Island station and on the Great Lakes station.

Admiral BLUE. The California station does not use this appropriation to cover such services. The limit was placed on Great Lakes owing to the large amount of clerical work done while the station was being built. This limit has been carried in the appropriation bills for maintenance ever since; it is no longer necessary.

The CHAIRMAN. What did you use for "clerical, drafting, inspection, and messenger service" last year out of the appropriation of \$70,000?

Admiral BLUE. No part of this appropriation was used for that purpose. Clerical hire for this station is paid from other appropriations. I have not the figures for it.

The CHAIRMAN. Can you insert them in the hearings at this point?

Admiral BLUE. Yes, sir. There was expended last year under "Pay, miscellaneous," \$1,600 for one chief clerk. This does not come under cognizance of the Bureau of Navigation. There was also clerical hire under Supplies and Accounts amounting to \$2,196.48.

The CHAIRMAN. I will ask you also, in the estimate of this \$70,000, how much do you include for "clerical, drafting, inspection, and messenger service"?

Admiral BLUE. No estimate is made for that in the maintenance appropriation for this station.

The CHAIRMAN. Can you put in the hearings at this point a statement of how much of the \$70,000 you estimate to go for "clerical, drafting, inspection, and messenger service"?

Admiral BLUE. Yes, sir. None from this appropriation. One chief clerk is employed at \$1,600 a year, but he is paid out of "Pay, miscellaneous."

Mr. ROBERTS. On the Rhode Island station you limit the "clerical, drafting, inspection, and messenger service" to \$5,701.60, and on the Great Lakes you make the limit for the same service \$44,553.36.

The CHAIRMAN. I will state, Mr. Roberts, that that ought to be corrected. That \$44,553.36 was put in for "clerical, drafting, inspection, and messenger service" while the station was being constructed.

Mr. ROBERTS. That is what I supposed.

The CHAIRMAN. And before it was put in operation. Since the last bill it has been put into operation, and now it ought to be put down to the actual amount.

Mr. ROBERTS. That is what I am getting at.

The CHAIRMAN. I have asked the admiral to put into the hearings a statement as to the amount estimated for "clerical, drafting, inspection, and messenger service" at the Great Lakes station so that we can see what will be needed. Also, Admiral, will you state whether you need the whole of the \$98,457 for the Great Lakes station?

Admiral BLUE. Yes, sir. Last year there was spent for that item \$1,397.76. We are estimating \$1,400 for next year. We will need the whole amount asked for, as this is a large station and expensive to maintain.

Mr. ROBERTS. Here is a station handling fewer men than any of the other stations, and yet the expenditure is greater.

The CHAIRMAN. As a matter of fact, they have never spent the \$44,000 "for clerical, drafting, inspection, and messenger service."

Admiral BLUE. There is no longer any necessity for that to appear in the appropriation bill. The training station at Newport, R. I., has what no other training station has, a public-works office under the Bureau of Yards and Docks. All training stations come directly under the Bureau of Navigation, but that station has drifted off in a way and gotten partly under another bureau. It is hoped, however, that this situation may soon be remedied and the station put on the same basis as the other training stations. It is not similar to a navy yard, it is not an industrial plant that needs a public-works office. The Bureau of Navigation hands over \$1,250 a month to be expended through this office, which costs the Government \$14,500 a year to maintain with other appropriations.

Mr. ROBERTS. What action is necessary?

Admiral BLUE. It does not require congressional action. A failure to appropriate for its maintenance would accomplish the purpose.

Mr. ROBERTS. In reference to the Great Lakes station, the Secretary told me that there was a naval hospital out in Chicago, and I gathered that it was in connection with this training station.

Admiral BLUE. It is.

Mr. ROBERTS. And that he had closed it?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. I am right about that?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. The hospital was built out of the appropriation as a part of this naval training station scheme and the Secretary has closed it?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. If that is true, the maintenance of that hospital, of course, should come out of the whole appropriation for the station.

The CHAIRMAN. The hospital has never been run.

Mr. ROBERTS. Has there not been some estimate for maintenance?

Admiral BLUE. Some of the underground steam pipes need repairing, and it ought to be kept in repair if it is ever to be of any use, and although it is not being used now, of course in case of necessity that hospital would have to be opened.

Mr. WITHERSPOON. When was that completed?

The CHAIRMAN. The last two years. Many years ago Congress appropriated for the establishment of this training station and the hospital as a part of the project, and the station was completed just about two years ago. They have not been running it; they have no use for it, and the Secretary closed it up to shut down the expenses.

Mr. ROBERTS. Do I understand you correctly, Admiral, that the piping in this new plant is already going to pieces?

Admiral BLUE. That is the report I have from the commandant of the station. He states that the conduits under barracks and quarters need constant attention.

(Thereupon the committee adjourned to meet to-morrow, Wednesday, December 10, 1913, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Wednesday, December 10, 1913.

The committee this day met, Hon. Samuel P. Padgett (chairman) presiding.

The CHAIRMAN. Gentlemen, we have with us again this morning Admiral Blue, Chief of the Bureau of Navigation.

**STATEMENT OF REAR ADMIRAL VICTOR BLUE, CHIEF
BUREAU OF NAVIGATION—Continued.**

Mr. ROBERTS. I want to ask the admiral a question or two with regard to aviation. At present we are employing commissioned officers of the Navy who do the mechanical work of running the flying machines. In other words, we are employing these commissioned officers as mechanics. Now, the thought has been suggested to me that we are employing too high a grade of men to do that part of the work. Of course, in actual warfare we want a commissioned officer in the machine, but we want him there to observe and to keep his eye out and see everything that can be seen and not be confined to the mechanical part of operating the machine. That work could be done just as well by any educated and trained chauffeur. In other words, that instead of having two commissioned officers in each flying machine with the consequent risk of losing both of them in case of accident, you have one commissioned officer whose sole duty is to command and tell the operator where he wants to go, and who would have nothing to do with the actual operating, and the other man would be what you might call a mechanic, a man who is a petty officer, an ordinary enlisted mechanic who has the ability to run the machine, reducing in one sense the cost of running the machine and in another sense minimizing the risk of losing the lives of men of considerable value to the Navy when men of less value could be had.

The CHAIRMAN. Enlisted men?

Mr. ROBERTS. Enlisted men. My idea would be to have an aviation corps and have all the mechanical part in actual operation done by men not commissioned officers. Do you get my idea, Admiral?

Admiral BLUE. Yes, sir. I do not think we are sufficiently advanced to come directly to that now. I have been informed by aviators of experience that a great many of the accidents that now occur

are due to the fact that nonscientific men have been flying these machines; that most of them have been unscientific men, men with mechanical skill, but not sufficiently educated in scientific principles to understand the various forces acting upon the machine while maintaining equilibrium in an air medium. Scientific flyers are required particularly at this stage in the development of the planes with a view to producing designs that will give better assurance of safety. Eventually we hope to have enlisted men flying also. When we have developed a design of machine that is comparatively safe.

Mr. ROBERTS. That is my idea, to start in and educate a corps.

Admiral BLUE. We are doing so now.

Mr. ROBERTS. That was brought more particularly to my mind by reading in the paper about the creation of an aviation corps in the Army to consist of a certain number of commissioned officers and 250 enlisted men, I think. I did not have an opportunity to read the whole article and ascertain just what they propose, but I think they have in mind just what I am suggesting, the use of the enlisted men. They will have the men to keep the machine clean, to make repairs, and to run the machine, leaving the commissioned officer as the pilot or commander, or whatever term you might want to use—the director of the machine—not committed or tied up to its actual operation, saving in that way over present methods one commissioned officer in each machine.

Admiral BLUE. We are coming to the same thing. But I do not favor a separate corps entirely distinct from any other branch, to be known as the aviation corps, but I believe in training the enlisted men to become fliers, and expect soon to see them flying. We have them stationed with the machines, familiarizing themselves with their use, but as yet they do not fly; only the officers do the flying.

Mr. ROBERTS. Perhaps I use the word "corps" inadvisedly. Just what phrase would you use to put these aviation men on a basis with the men whom you employ in the submarines? It is not a corps exactly; it is not a bureau.

Admiral BLUE. It is all a question of detail to aviation duty.

Mr. ROBERTS. Men in the submarines get certain increase of pay and certain favors?

Admiral BLUE. Something on the same order should be given men detailed with aeroplanes.

Mr. ROBERTS. That would be my idea of the aviation branch of the service.

Admiral BLUE. We do not want to separate them from the rest of the service.

Mr. ROBERTS. No; I did not mean that, but they have separate duties and should have probably an increase of pay because of the hazard of the occupation.

Admiral BLUE. I believe in that, thoroughly.

Mr. ROBERTS. Can you see in the near future sufficient importance of aviation to have a corps such as the Signal Corps?

Admiral BLUE. It might possibly come to that in the Army, but the Navy organization would hardly permit of it. If in the Navy we had a special corps of aviators an officer could not advance higher than the highest grade in that corps, which would not be very high. A regular aviation corps would not, therefore, be attractive to officers, as, no doubt, the grades in it would be limited to

those of junior rank. An ambitious young officer would hardly give up his chances of commanding a battleship by entering a corps in which he could rise no higher than lieutenant or lieutenant commander.

Mr. ROBERTS. And he would lose touch with the general service?

Admiral BLUE. Yes, sir; he would lose touch with the general service. That is what we try to avoid in the Navy by making limited details for submarine duty and torpedo boat duty. Aviation will come under the same head.

Mr. ROBERTS. Have you started to make details to this service among the enlisted men?

Admiral BLUE. Yes, sir; we have a number at the aviation camp at Annapolis. This camp is transferred to Guantanamo during the winter months in order to take part in maneuvers with the fleet.

Mr. ROBERTS. How large a force have you of the enlisted men now?

Admiral BLUE. There are now 8 officers of the Navy, 2 marine officers, and 40 enlisted men at the aviation camp.

Mr. BATHRICK. How many men in the entire service are trained now to fly in these machines?

Admiral BLUE. Fourteen officers are qualified pilots, and 240 have taken flights under instruction. During the last year 2,118 flights have been made and 1,470 passengers carried for purposes of instruction and observation.

Mr. BATHRICK. Are you contemplating a larger expenditure for aviation purposes this year than last?

Admiral BLUE. We are, sir. The material part of aviation does not come under my bureau, and is not provided for in my estimates, but there will be something asked for by the material bureaus concerned.

The CHAIRMAN. The next item is "Naval War College, Rhode Island," and the language is the same and the amount is the same as last year. Did you have any unexpended balance last year?

Admiral BLUE. No, sir; there was no unexpended balance.

The CHAIRMAN. Do you think you will need the full amount?

Admiral BLUE. Yes, sir.

The CHAIRMAN. The next item is, "Naval Home, Philadelphia, Pa." I notice you are making some slight raises in the salaries, increasing one beneficiaries' attendant from \$240 to \$300, one assistant cook from \$240 to \$300, one chief laundress from \$216 to \$240, one head waitress from \$216 to \$300; you add one laborer at \$420, and you estimate for one laborer at \$360, instead of two laborers at \$360 each, making the estimate this year \$22,696, as against \$22,288 appropriated last year. All of that is paid out of the naval pension fund?

Admiral BLUE. Yes, sir; it is all paid out of the naval pension fund.

The CHAIRMAN. The naval pension fund is the interest upon the fund that is a trust fund for the benefit of the naval personnel?

Admiral BLUE. Yes, sir. These increases were made at the earnest request of the governor of the home, who submitted a letter giving his reasons in detail.

The CHAIRMAN. Please put that letter in the hearings so that we can have it for consideration when we take up the items in detail.

Admiral BLUE. Yes, sir.

The following is the letter referred to:

GOVERNOR'S OFFICE,
UNITED STATES NAVAL HOME,
Philadelphia, Pa., July 22, 1913.

To: Bureau of Navigation.

Subject: Estimates, fiscal year 1915.

Reference:

(a) Bureau's letter No. 3696-228-5, of May 14, 1913.

(b) Bureau's letter No. 3696-228-5, of July 16, 1913.

1. The following estimates of appropriations for the Naval Home for the fiscal year ending June 30, 1913, are submitted:

Object.	Appropriated for 1914.	Submitted for 1915.
Naval Home, Philadelphia, Pa.:		
Pay of employees—		
1 secretary	\$1,600	\$1,600
1 foreman mechanic	1,500	1,500
1 superintendent of grounds	720	720
1 steward	720	720
1 store laborer	480	480
1 matron	420	420
1 beneficiaries' attendant (increase of \$60 per annum submitted)	240	300
1 chief cook	480	480
1 assistant cook	360	360
1 assistant cook (increase of \$60 per annum submitted)	240	300
1 chief laundress (increase of \$24 per annum submitted)	216	240
5 laundresses, at \$192 each	960	960
4 scrubbers, at \$192 each	768	768
1 head waitress (increase of \$84 per annum submitted)	216	300
8 waitresses, at \$192 each	1,536	1,536
1 kitchen servant (increase of \$120 per annum submitted)	240	360
8 laborers, at \$360 each	2,880	2,880
1 stable keeper and driver	480	480
1 master at arms	720	720
2 house corporals, at \$300 each	600	600
1 barber	360	360
1 carpenter	846	846
1 painter	846	846
1 painter	720	720
1 engineer of elevator and machinery	720	720
5 laborers, at \$540 each	2,700	2,700
1 laborer (increase of \$60 per annum submitted)	360	420
1 laborer	360	360
Total	22,288	22,696
Maintenance—		
Water rent, heating, and lighting; cemetery, burial expenses, and headstones; general care and improvement of grounds, buildings, walls, and fences; repairs to power-plant equipment, implements, tools, and furniture, and purchase of the same; music in chapel and entertainments for beneficiaries; stationery, books, and periodicals; transportation of indigent and destitute beneficiaries to the Naval Home, and of such and insane beneficiaries, their attendants and necessary subsistence for both, to and from other Government hospitals; employment of such beneficiaries in and about the Naval Home as may be authorized by the Secretary of the Navy, on the recommendation of the governor; support of beneficiaries, and all other contingencies	54,421	54,421
Rebuilding river bulkhead	5,500	.....
In all, for Naval Home	82,209	77,117
Which sum shall be paid out of the income from the naval pension fund.		

Provided, That all moneys derived from the sale of material at the Naval Home, which was originally purchased from moneys appropriated from the income from the naval pension fund, and all moneys derived from the rental of Naval Home property, shall be turned into the naval pension fund: *And provided further*, That all moneys belonging to a deceased beneficiary of the Naval Home or derived from the sale of his personal effects, including all such moneys now deposited in the Treasury under the act approved August 22, 1912, and which are not claimed by his legal heirs or next of kin, shall be deposited with the pay officer of the Naval Home, and if any sum so deposited has been or shall hereafter be unclaimed for a period of two years from the death of such beneficiary it shall be deposited in the Treasury to the credit of the naval pension fund, from the income of which the Naval Home is supported: *And provided further*, That the pensions of beneficiaries of the Naval Home shall be disposed of in

the same manner as prescribed for inmates of the Soldiers' Home, as provided for in section 4 of the act approved March 3, 1883, under such regulations as the Secretary of the Navy may prescribe, except that in the case of death of any beneficiary leaving no heirs at law nor next of kin, any pension due him and remaining in the hands of the governor of the home shall escheat to the naval pension fund.

2. An increase of \$5 per month is recommended for the beneficiaries' attendant, whose pay is now \$20 per month. This man's duties require that he attend to the older and more feeble of the beneficiaries, bringing their meals to them when necessary, cleaning and caring for their rooms and clothes, and leading some of them who are blind to and from their meals and about the grounds. His work extends from 6 a. m. until 6 p. m., and at times later.

3. An increase of \$5 per month is recommended for the second assistant cook, whose pay is now \$20 per month. This man's duties consist of cleaning all pots, pans, and other utensils used in cooking, including several large vegetable and soup steam cookers, and of cleaning the kitchen generally. The labor is hard and the hours long, and I consider this man well worthy of the slight increase recommended.

4. An increase of \$2 per month is recommended for the chief laundress. Aside from the work required for this position, the responsibilities entailed by the care and operation of the laundry and the supervision of the other laundresses, I also consider the chief laundress worthy of the increase recommended on account of her long and faithful service at the Naval Home, having been in her present position 14 years.

5. An increase of \$7 per month is recommended for the head waitress, whose pay is now \$18 per month. There are eight waitresses under the supervision of the head waitress, who is charged with the general care of the dining room and the serving of meals. It is difficult to find a suitable person, one of sufficient force of character and ability to properly manage the waitresses. It is deemed of the utmost importance in an institution of this kind that the efficiency of the dining room be maintained at the highest standard possible, and with this end in view the recommendation for an increase in pay is made in order that a suitable person for this position may be obtained. It is impossible to procure the services of such a person under the present rate of pay.

6. An increase of \$10 per month is recommended for the kitchen servant, whose pay is now \$20 per month. This man is required to tend the kitchen fires and to perform other work about the kitchen, such as assisting in the preparation of food, peeling potatoes and vegetables, chopping meat, etc., besides a certain amount of cleaning. He reports and makes the coffee for the beneficiaries who desire it at 5 a. m. His work is of a higher order than that of the second assistant cook, and should the present incumbent relinquish his position it would be impossible to fill the position with a suitable person at a salary of \$20 per month.

7. An increase of \$5 per month is recommended for one laborer who now receives \$30 per month. The man holding this position is more a mechanic than a laborer; he assists the carpenter, painter, and engineer in their work; he also attends to minor plumbing repairs and pipe fitting, and is a general handy man about the place. He is also capable of performing small jobs of masonry, bricklaying, cementing, etc., and attends to all repairs of cement walks, which otherwise would have to be done under outside contracts at considerable expense. The pay of this position was \$25 per month up to July 1, 1913, when it was increased to \$30 per month, when other laborers were increased from \$20 to \$30 per month. As the work of this position is of a higher order than that of any other laborer except the firemen, it is deemed just that the man should receive a slight increase in pay over that of an ordinary laborer.

8. The garbage and bones accumulated at the Naval Home are sold to the highest bidder, and about \$150 annually is derived from this source. A lot of old iron, brass, copper, and other metals accumulates from time to time, and is sold at auction to the highest bidder as junk. The proceeds of such sales, together with the proceeds from the sale of garbage and bones, is turned into the Treasury to the credit of miscellaneous receipts. As the articles were originally purchased, or derived from the naval pension fund, it is deemed just and right that the naval pension fund should have the benefits of such sales, as well as the benefit of the moneys derived from the rental of that part of the Naval Home property lying west of Schuylkill Avenue and extending to the Schuylkill River, which is rented to the Philadelphia Rapid Transit Co. at an annual rental of \$1,350. On a recent visit of inspection to the Naval Home, the chairman of the House Committee on Naval Affairs requested information concerning the disposition of the rental of the Naval Home property, as well as the disposition of the money received from the sale of garbage and bones, and when told it was credited to miscellaneous receipts, and that the Naval pension fund derived no benefit whatever from such moneys, he expressed surprise and intimated that the matter should be investigated and corrected. A provision with this end in view is attached to these estimates.

9. In January, 1912, the governor of the Naval Home submitted a draft of a bill similar to that set forth in the proviso attached to the accompanying estimates, providing for the disposition of the sum of \$992.27, which was turned in to the Treasury, to the credit of miscellaneous receipts, in accordance with the act approved August 22, 1912, being the property of deceased beneficiaries who left no heirs at law nor next of kin, but contrary to this recommendation, a clause was attached to the appropriation act for 1913, placing the responsibility of handling these funds upon the governor of the Naval Home, instead of upon the pay officer. The pay officer, being a bonded officer, is the proper person to handle such funds, and his office has the organization and facilities for such work. The handling of these funds in the governor's office, where there is only one person available for such work, is a great inconvenience, and will necessitate the opening of a separate set of accounts with the Treasury Department, which additional work will be a great burden upon the office. Furthermore, it is recommended that this money be credited to the Naval pension fund. That it is now credited to miscellaneous receipts, instead of to the naval pension fund, I consider a great injustice. Inasmuch as the beneficiaries of the Naval Home are supported from the income from the naval pension fund, their pay and pocket money paid from that fund, and in many instances, if not all, the personal effects left by them consist of clothing purchased for them from this fund, it is deemed just and desirable that the naval pension fund should receive the benefit of the money thus covered into the Treasury. In the National Home for Disabled Volunteer Soldiers and Sailors all such money becomes the property of the homes and is used in the support of the homes, in fact, every application for admission for membership in such homes constitutes a valid contract between the applicant and the board of managers, that on the death of the said applicant, while a member of such home, leaving no heirs at law nor next of kin, all personal property owned by said applicant at the time of his death, including money or choses in action held by him and not disposed of by will, whether such property be the proceeds of pensions or otherwise derived, shall vest in and become the property of the board of managers for the sole use and benefit of the post fund of said home, and that all personal property of said applicant shall, upon his death, while a member, at once pass to and vest in the board of managers, subject to be reclaimed by any legatee or person entitled to take the same by inheritance at any time within five years after the death of such member. This provision is embodied in the act approved June 25, 1910. The second proviso attached to these estimates will give the naval pension fund similar benefits.

10. There is a third proviso attached to the estimates for 1915, with a view to giving the beneficiaries of the Naval Home the benefits of their pensions. For many years the Bureau of Navigation has recommended in its annual reports, that the inmates of this home be placed on the same footing in regard to pensions as the inmates of the Soldiers' Home. The pensions of inmates of the Soldiers' Home are paid to the treasurer of the home, held in trust for the men, and such part of it as shall not sooner have been paid to them shall be paid to them on discharge from the institution. Also the inmates of the Soldiers' Home may have part of their pensions paid to a wife, child, or parent by the Bureau of Pensions.

11. It is not the intention to permit persons receiving large pensions or retired pay to enter and reside at the home, but to make the home available for such needy persons whose pensions are small and who, in many cases, have a wife, child, or dependent relative. The former class can easily be prevented from entering the home by investigating their cases and examining their pension certificates, and by giving preference to men of long service and small pensions and to those who have been disabled in the service in line of duty. The deprivation of their pensions has often caused the separation of a beneficiary's family; a pensioner becomes too old and feeble to earn sufficient to add to his pension and support himself and wife, and his pension being too small to aid in his support, not to speak of that of his wife, the only course open to him is to have his wife or child placed in some charitable institution, a charge on some State, while he is compelled to enter the home and surrender his pension. Were he allowed to retain his pension, or at least to have the benefits of it, as is the case with inmates of the Soldiers' Home and the National Home for Disabled Volunteer Soldiers, his pension would probably be sufficient to support, in part at least, his wife, and the latter could, if she so desired, take up her residence near the Naval Home, and the two thus be enabled to spend their last days together, instead of being separated and their homes broken up in their declining years.

12. About \$12,000 is collected annually on account of the pensions of beneficiaries of the Naval Home and returned to the naval pension fund, and it may be said that should this recommendation be enacted into law, this amount will approximately represent the total additional outlay of money involved by the change, for the reason that any increase in the membership of the Naval Home will be derived from the present

inmates of the National Home for Disabled Volunteer Soldiers, who while residing in those homes, of which there are 10 in addition to the Soldiers' Home in Washington, D. C., receive their pensions. This additional outlay of funds would easily be covered by the interest from the naval pension fund, which amounts to more than \$400,000 annually, and would not be an additional drain upon the Treasury.

13. At the end of the fiscal year 1911 there were 1,663 Navy men in the National Home: The Naval Home could accommodate about 155 of the most worthy of these cases. There were 26,514 members on the rolls of the national homes on June 30, 1910, and the average pension per man per year was \$172.60; for these members a total of \$4,071,629.04 in pension money was paid into the homes, of which \$925,991.62 was sent to the families of the inmates.

14. It is believed that it would be unnecessary to increase the amount now appropriated for the support of the home on account of additional inmates. The only principal expenditures involved by such increase would be in the cost of subsistence and clothing, and these increases would probably be made up by curtailing in other departments, such as in the pay of rated beneficiaries and pocket money. So far as the maintenance of the power plant, buildings, and grounds, and the number of employees is concerned, the cost to the Government would be practically the same for 75 inmates as for 225. Should additional help be required, some of the more able of the beneficiaries could be detailed for light work.

15. It is an injustice, not only to the beneficiaries of the Naval Home, but to the service at large, that the men of the Navy should be discriminated against in favor of the men of the Army in the matter of pensions.

16. In his last two annual reports the Secretary of the Navy also recommended legislation placing the inmates of the Naval Home on the same footing as inmates of the Soldiers' Home in regard to their pensions.

J. H. HETHERINGTON.

The CHAIRMAN. The next item is "Maintenance," and the items are the same, but you have reduced the amount from \$82,209 to \$77,117, and then you have added the proviso:

Provided, That all moneys derived from the sale of material at the Naval Home, which was originally purchased from moneys appropriated from the income from the naval pension fund, and all moneys derived from the rental of Naval Home property, shall be turned into the naval pension fund: And provided further, That all moneys belonging to a deceased beneficiary of the Naval Home or derived from the sale of his personal effects, including all such moneys now deposited in the Treasury under the act approved August twenty-second, nineteen hundred and twelve, and which are not claimed by his legal heirs or next of kin, shall be deposited with the pay officer of the Naval Home and if any sum so deposited has been or shall hereafter be unclaimed for a period of two years from the death of such beneficiary it shall be deposited in the Treasury to the credit of the naval pension fund, from the income of which the Naval Home is supported.

Then there is a further proviso in regard to the pensions of the beneficiaries in the naval home, that they shall be placed on the same basis as beneficiaries in the soldiers' home.

Mr. ROBERTS. What is the provision of the act approved March 3, 1883?

The CHAIRMAN. That provision in a general way provides that when a soldier goes to the soldiers' home he retains his pension and it is paid to his family for the support of his wife and children. In the naval home if a man goes there he loses his pension altogether, and the family does not get the benefit of the pension, so that the naval man is put to the necessity of choosing between going to the naval home and losing his pension, which might be used for the benefit of himself and his family, or remaining out of the home in order to get the benefit of the pension for the use of his family.

Mr. ROBERTS. How about the soldiers' home, where the old soldier has no family and no one dependent upon him, what becomes of his pension?

Admiral BLUE. It reverts to the pension fund if he dies. That is to say, the amount saved from his pension up to the date of his death.

Mr. ROBERTS. While he is in the home. A soldier in the soldiers' home, say, was drawing a pension before he went there, and under this act of 1883, as explained by the chairman, if he has not dependent upon him a wife and children, the governor of the home can take that pension and apply it to his benefits?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. What becomes of the pension; does he enjoy it?

Admiral BLUE. Yes, sir; he has the enjoyment of it himself under the regulations of the home.

Mr. ROBERTS. I believe that the old soldiers in the homes should have their pensions.

Mr. STEPHENS. I would like to call attention to one word. On page 28, in the fourth line from the bottom, it says: "That all moneys belonging to a deceased beneficiary of the naval home." Had that not better be changed to "any" instead of "a"?

The CHAIRMAN. Two years ago we passed a law, and this is an amendment of that law.

Mr. STEPHENS. I do not think you catch my point, Mr. Chairman. This applies particularly to one. If that should happen once, could it happen again under the law? My point is that the word should be changed to "any," and thereafter we could have a succession of cases.

The CHAIRMAN. You mean "any deceased beneficiary" instead of "a deceased beneficiary"?

Mr. STEPHENS. Yes, sir.

The CHAIRMAN. We will take notice of that when we come to frame the bill.

The first part of the proviso is, "That all moneys derived from the sale of material at the naval home which was originally purchased from moneys appropriated from the income"; instead of going into the General Treasury you want it to go back to the naval fund, the fund from which it was taken to buy the property?

Admiral BLUE. Exactly.

The CHAIRMAN. Instead of turning the money into the miscellaneous receipts of the Treasury, this provides that if you buy the property with the money of the naval fund, when you sell it you put the proceeds back into that fund?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Is it intended to make a discrimination between moneys derived from the sale of material at the home?

The CHAIRMAN. I presume from this language that if the money that bought the property came from appropriations out of the Treasury that if it was sold the proceeds of that property would go back into the Treasury.

Mr. ROBERTS. Is not that too small a matter to discriminate on?

The CHAIRMAN. I do not know. The great bulk of it always comes from the naval pension fund.

Mr. ROBERTS. That is what I had in mind. I can not conceive of anything at the home that did not come out of the naval pension fund, and this would indicate that there was something.

The CHAIRMAN. If there is anything that is sold that came from other funds, it would not be turned into the naval pension fund.

Mr. ROBERTS. Why not strike out that language?

The CHAIRMAN. It occurs to me that Congress would want to know, and would not want to increase the pension fund by the sale of other property which Congress may have or might have to appropriate for.

Admiral BLUE. This language was only put in to explain why the money should revert to the pension fund.

Mr. ROBERTS. That is what I thought it was, only explanatory, and that it would not be necessary in the law.

Mr. TALBOTT. If money was taken out of the Treasury to make the purchase, and the property is sold, it ought to go back to the Treasury, and that is all you want?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. There are no cases.

Mr. TALBOTT. But there may be cases, however.

The CHAIRMAN. As to the second proviso, why do you change the provision of the law that was asked for two years ago? Two years ago they asked us to make a provision to take this money away from the pay officers because they did not want to be responsible for it, and to keep continued accounts of these funds running along, and asked that after it had remained in their hands, as I now remember, for two years, that it should then be turned into the Treasury as miscellaneous receipts. Now this provision provides that money in the Treasury, together with any other money shall be turned back to the pay officers, that they shall hold it, and if it is not claimed by the next of heirs it shall go to the naval pension fund?

Admiral BLUE. Under the former provision it would be turned over and held by the governor of the home. The governor of the home has no way of keeping money safely; he is not an accounting officer or a disbursing officer, and if he held the money he would have to open an account himself with the Treasury. The pay officer already has an account, he has a safe, and a place where it can be held for the two years.

Mr. TALBOTT. Why could it not be turned into the Treasury to the credit of the pension fund?

Mr. ROBERTS. The law of two years ago provided that this money should be—

deposited in the Treasury by the governor of the home as agent, and if any sum so deposited has been or shall hereafter be unclaimed for a period of five years from the death of such inmate, it shall be covered into the Treasury as miscellaneous receipts.

That is quite different.

The CHAIRMAN. That is because for two years somebody might come and claim it, and then it would be easier to turn it over to the relatives of the man or his legal representatives than it would be if turned into the Treasury.

Mr. ROBERTS. The law two years ago said five years.

The CHAIRMAN. And also turned it in as miscellaneous receipts.

Mr. ROBERTS. If it was not claimed, it was turned in.

The CHAIRMAN. If it is not claimed, it is turned into the pension fund.

Mr. ROBERTS. Two years ago the governor was directed to make diligent inquiry for the next of kin, and then it was further provided—that claims may be presented hereunder at any time, and when supported by competent proof in any case more than five years after the death of an inmate, shall be certified to Congress for consideration.

Mr. TALBOTT. Did we not have a provision in one law that a man could designate who should be the beneficiary?

The CHAIRMAN. That does not relate to these people.

Mr. ROBERTS. These are not enlisted men.

Mr. TALBOTT. Why not let the pensioner designate where it shall go just as the enlisted man?

Admiral BLUE. He can do so with his personal property, but he has no control over his pension while at the home.

Mr. TALBOTT. Under the law?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. If he makes a will.

The CHAIRMAN. Where there is no next of kin and no will, it is just sent there, and under the provision of two years ago it went into the miscellaneous receipts of the Government.

Mr. TALBOTT. A pensioner who has no relatives and no next of kin can dispose of it as he pleases?

The CHAIRMAN. Yes, sir.

Admiral, please put in the hearings a full statement of the reasons why you want to make this change.

Admiral BLUE. Yes, sir.

(The statement referred to is as follows:)

In January, 1912, the governor of the naval home submitted a draft of a bill similar to that set forth in the proviso attached to the accompanying estimates, providing for the disposition of the sum of \$992.27, which was turned into the Treasury to the credit of miscellaneous receipts, in accordance with the act approved August 22, 1912, being the property of deceased beneficiaries who left no heirs at law nor next of kin, but, contrary to this recommendation, a clause was attached to the appropriation act for 1913 placing the responsibility of handling these funds upon the governor of the naval home instead of upon the pay officer. The pay officer being a bonded officer is the proper person to handle such funds, and his office has the organization and facilities for such work. The handling of these funds in the governor's office, where there is only one person available for such work, is a great inconvenience and will necessitate the opening of a separate set of accounts with the Treasury Department, which additional work will be a great burden upon the office.

Mr. LEE. Just one word. The city of Philadelphia is very anxious to secure the property now occupied by the naval home for a playground. Have you any idea, Admiral, that it would be a good scheme to move the naval home to League Island and sell this property to the city?

Admiral BLUE. I think the property is really too valuable for its present purpose. No doubt it could be sold for a sufficient amount to buy a larger tract of land in the vicinity of Philadelphia or elsewhere and to erect upon it a more commodious, comfortable, and up-to-date building for a home for these old soldiers than the one they now have. Twenty-two or twenty-three acres in the heart of Philadelphia is certainly a valuable piece of property.

Mr. LEE. I think about 23 acres.

Admiral BLUE. Yes, sir; 23 acres.

Mr. BATHRICK. What is it worth an acre?

Mr. TALBOTT. That land is not sold by the acre; it is sold by the front foot.

Mr. BATHRICK. Mr. Lee, has the city of Philadelphia made an offer?

Mr. LEE. The city of Philadelphia, I think, would agree to build a naval home at some other point or would build it at League Island. I think the city of Philadelphia would be willing to build a home for

these old veterans at League Island or any place the Government might suggest. I would be glad to have the Admiral state if he has any other reason why it should be taken away from there outside of the fact that the property is valuable?

Admiral BLUE. I have no other reason than that we could get a great deal better home for these old men if we should sell the property for what it is worth and apply the proceeds toward purchasing another place in some locality where land is not so valuable, and erecting a modern building, more sanitary in every respect than the old one now serving the purpose.

Mr. ROBERTS. Some of it might very well be disposed of now, because it has no connection with the tract where the buildings are situated. One part of it is entirely cut off by a public street.

Mr. BATHRICK. Does the Government own the riparian rights on the water front?

Admiral BLUE. The Government owns the whole property, about 23 acres, including the riparian rights.

Mr. ROBERTS. There is a part entirely cut off by a public street.

Mr. BATHRICK. Does the Government own the water front?

Mr. ROBERTS. Yes, sir.

(Thereupon the committee adjourned to meet to-morrow, Thursday, December 11, 1913, at 10.30 o'clock, a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Thursday, December 11, 1913.

The committee met at 10.30 o'clock, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL VICTOR BLUE, CHIEF
BUREAU OF NAVIGATION—Continued.**

The CHAIRMAN. Admiral, I believe the subject of the pay of the Navy comes under your bureau?

Admiral BLUE. Yes, sir.

The CHAIRMAN. I notice that last year we appropriated \$39,000,000, and this year you are asking for \$40,000,000, an increase of a little less than \$1,000,000. Will you please explain the reasons for the increase in the amount?

Admiral BLUE. There is a total increase in the estimate over the amount appropriated for the fiscal year 1914 of \$786,062. This increase is best explained by the various items under the estimate, as follows: Pay of 3,976 officers on the active list; appropriation, 1914, was for 3,821, giving \$10,770,792. The estimate for 1915 is 3,976 officers and \$11,058,644, making an increase of 155 officers and \$287,852.

I will explain how this was made. In estimating for the 3,976 officers—the number that we figure on having in the service at the end of the fiscal year 1915—the customary practice in the bureau has been followed. Of course, we will not have fully that number. So from that amount I cut out \$500,000. That is taken from this \$11,058,644, and accounts for where it is placed in the estimate as \$10,558,000, because throughout the year we will not have the full

number. The reason heretofore given for the estimate being based on the number of officers at the end of the fiscal year is that in case of emergency we would be able to commission the first class of midshipmen ahead of time, as has been done in the past, besides allowing for filling the staff corps and warrant grades throughout the year. The estimate I have made will more nearly cover the average number we should have during the year.

The CHAIRMAN. In other words, you estimate that while that took a full number off the full year it would be \$11,000,000 and something—

Admiral BLUE. About ten and one-half millions.

The CHAIRMAN. You do not expect to have the full number for the full year, and you have cut out an estimated amount?

Admiral BLUE. I have cut out \$500,000 for that reason.

Mr. WITHERSPOON. Do you know the actual number of officers we have now?

Admiral BLUE. Oh, yes, sir.

Mr. WITHERSPOON. What are they?

Admiral BLUE. Three thousand two hundred and fifty-eight on January 1, 1913, including commissioned and warrant officers. We can not tell the exact number we will have two years from now, but have to make a liberal estimate in order to be on the safe side.

Mr. WITHERSPOON. I am asking what the actual number is now. What is the number?

Admiral BLUE. I will say, before answering that question, that the number of officers estimated for in 1914 was found to be too large, as the experience goes to show. There were estimated 3,821. The actual number of officers that we had January 1, 1913, was about 3,300.

Mr. WITHERSPOON. Three thousand three hundred?

Admiral BLUE. A little short of 3,300. So that that estimate made for the last year was found to be too large, considerably too large.

Mr. ROBERTS. How could that happen, that they should make so wide a guess—\$500,000 out of the way?

Admiral BLUE. That estimate was based on filling up the Medical and Pay Corps, the new Dental Corps, and commissioning three graduating classes from the Naval Academy, as well as appointing the usual number of warrant officers from enlisted men. To the number on the list, as it existed on January 1, 1912, was added the number that could possibly be appointed by law between that date and June 30, 1914. The number estimated for has not been realized, and consequently there will be a considerable balance from the appropriation.

The CHAIRMAN. Admiral, you have made this estimate on the basis of 3,976 officers. As a matter of fact, you have a little less than 3,300 officers at the present time?

Admiral BLUE. Less than 3,300 on January 1, 1913, the date from which the estimate was based. We now have 3,435.

The CHAIRMAN. Are you expecting to increase the number of officers during the fiscal year 1915 by 600?

Mr. WITHERSPOON. Nearly 700.

The CHAIRMAN. Over 600.

Admiral BLUE. About 700 more than we had a year ago.

The CHAIRMAN. Seven hundred.

Mr. WITHERSPOON. Seven hundred; if it is less than 3,300, it would be nearly 700.

Admiral BLUE. I have a statement here in regard to it, from which I have made this estimate of what we ought to have, regardless of what was appropriated last year.

Mr. WITHERSPOON. Yes; we would like to have that.

Admiral BLUE. This other estimate was simply to show why the increased number was based on the number for the current year. I have another estimate showing just what we think would be the number of officers in case the full number allowed by law are appointed.

Mr. WITHERSPOON. We would like to have that and we would like to put it fully in the record. You may state the substance of it and put the whole thing in the hearings. [See Appendix A.]

Admiral BLUE. The number of officers of the line was 1,708 on January 1, 1913.

Mr. BROWNING. This is what is in the Navy at present?

Admiral BLUE. We have more than that now. The figures used to work from were those in the last Navy Register published January 1, 1913.

Mr. WITHERSPOON. Officers, how many?

Admiral BLUE. Officers of the line, 1,708; the expected number on June 30, 1915, is 2,100.

Mr. ROBERTS. Just a little information, if it will not interrupt you. Why do you expect to get that additional number?

Admiral BLUE. An increase of 392 line officers due to the normal increase from the Naval Academy. Under the law, midshipmen when they graduate will be commissioned, and taking the classes actually there the number we estimate will be 392 who will be graduated and commissioned as ensigns before the end of the fiscal year.

The CHAIRMAN. Between now and June 16.

Mr. TRIBBLE. Is that the ordinary graduating class?

Admiral BLUE. The classes now average about 162 a year.

Mr. WITHERSPOON. I think you graduated about 140 last June?

Admiral BLUE. That class is somewhat smaller than the other classes to follow. The present fourth class has 306 members in it.

Mr. TRIBBLE. With such an enormous increase, what becomes of them? You have only 3,100 officers now. What becomes of these officers? The plucking board must be in pretty active operation.

Admiral BLUE. As a matter of fact, these midshipmen who are made ensigns on the bottom of the list remain ensigns for three years under the law; then they are entitled to be promoted to junior lieutenants. When they reach the grade of junior lieutenant, they must remain in that grade till vacancies are made in the grades ahead, so that they can move up according to seniority. It will be seen that at the present time we have, including junior lieutenants and ensigns alone—those two lower grades in the Navy—approximately 1,000 officers, and above that grade 750 officers. So those two lower grades will be added to every year by commissioning an average of 162 graduates from the Naval Academy. Under existing law only 40 junior lieutenants may be promoted a year. This will make a net increase of 122 junior officers every year. So that 10 years hence we will have more than 2,200 in these two junior grades and only 750 above.

Naturally there will have to be some redistribution of officers throughout the various grades, otherwise hundreds of men will stay in the grade of junior lieutenant all their lives. That is the situation. Under existing conditions we can look forward to the time when a junior lieutenant will be older than captains are at present.

Mr. STEPHENS. Admiral Blue, you say that you have 1,700 line officers at present?

Admiral BLUE. Yes, sir; 1,708 on January 1, 1913, and about 1,787 at the present time.

Mr. STEPHENS. You have approximately 400 next June, because of graduations at Annapolis?

Admiral BLUE. Not next June, but the June following.

Mr. STEPHENS. Does that mean that there will be 392 graduates that year from Annapolis?

Admiral BLUE. No, sir. It means a net increase in the line between January 1, 1913, and June 30, 1915, due to the classes graduating at the Naval Academy, after deducting the number of retirements that may occur in the meantime.

The CHAIRMAN. This included two years. You see we are appropriating up to 1916.

Mr. WITHERSPOON. Admiral, why do you estimate for 200 of those that will graduate in June, 1915? That will be the end of this fiscal year that we are appropriating for, and there will be no salaries to be paid then.

The CHAIRMAN. We are appropriating for the year beginning June, 1915, and running to June, 1916. We run ahead.

Mr. ROBERTS. Taking the converse of that, we have already appropriated to June, 1915, and ending June, 1914. Have you included the graduates for 1914?

Admiral BLUE. We have included here all graduates up to June, 1915.

The CHAIRMAN. We have only appropriated for that year, but they will be included in the next year, as well as in the first year, because when they enter the next year they have to be appropriated for in the second year, as well as the ones who come in the second year.

Mr. ROBERTS. I understand that, but I gather from the admiral's statement, he is estimating for 392 additional officers.

The CHAIRMAN. Additional to what we have at this time; not additional to what we will have a year from now?

Mr. ROBERTS. I suppose his estimate was made in addition to what we are appropriating for in the current fiscal year.

The CHAIRMAN. No; he said additional to what we have in the line at the present time. He says at the present time we have 1,708. Now, then, there will be 162 added next June, as the graduating class, and in June, 1915, there will be 162 added again.

Mr. ROBERTS. But were not those graduates of next June added to the present bill?

Admiral BLUE. They are appropriated for under the bill. As previously mentioned, I am now estimating the number of officers we should have in June, 1915, regardless of the number appropriated for this year.

Mr. ROBERTS. And it will increase the total amount of that bill.

The CHAIRMAN. I am not talking about the amount; I am talking about the number of officers.

Mr. ROBERTS. I understand.

The CHAIRMAN. And that question of amount we will discuss when we reach that.

Mr. ROBERTS. I would not call them additional officers, because we have already taken them into account and appropriated for them.

The CHAIRMAN. But he is not counting them in his 1,708, although he has made an estimate that after next June they will have to be carried on the list and put in the appropriation bill; they are not counted as officers in this 1,708.

Mr. ROBERTS. As I understand, Admiral, you cut the pay of the officers half a million?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. In view of the fact that we are 600 or 700 short of the estimated number of officers for the current fiscal year, do you not think you could cut that still more? Do you think there is any better prospect of filling up the total number in the fiscal year 1915 than there was in the fiscal year 1914?

Admiral BLUE. As a matter of fact, my estimate increases the estimate for this fiscal year by only 155 officers, because the estimate for this fiscal year I considered too great. So I wanted to come right down to the actual number, which we might expect to have under the law; and, of course, allow some leeway. We do not want to allow too little leeway, because we might run short. If this estimate was based absolutely on the estimate of last year, instead of having an increase of \$700,000, we would have an increase of more than \$1,000,000.

Mr. WITHERSPOON. You estimate now that we will have 2,100 officers. Why do you put that down?

The CHAIRMAN. Of the line. He has not mentioned the staff yet. Proceed, and state what additional officers you have now.

Admiral BLUE. We will take now the Medical Corps. There are now 293 officers in the Medical Corps proper. The law allows 347, which will make an increase of 54 officers if the Medical Corps is filled up.

Mr. ROBERTS. Let me ask you right there, Admiral, if you will, they have had difficulty for several years in getting a sufficient number of officers in the Navy for the Medical Corps, have they not?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. Do you know whether the conditions have changed in any respect so it will be easier in the year 1915 to get them?

Admiral BLUE. The department has instituted a new system of getting them and I think it will work very well. The officers who are now appointed in the Medical Reserve Corps that was allowed by Congress a year or two ago may now with facility enter into the regular Medical Corps by coming to Washington and taking a course in the Naval Medical School. So it is found that a good many young doctors are taking advantage of the opportunity to come here and pursue the special course that will fit them to pass the regular examination for the Medical Corps.

Mr. ROBERTS. Do they have to pass any preliminary examination before they are brought on here for the final instructions?

Admiral BLUE. Yes, sir; but it is not as hard as the examination for entering the regular Medical Corps.

Mr. ROBERTS. Why should it not be just as hard, Admiral?

The CHAIRMAN. They are taken in only on probation in the Medical Reserve Corps.

Mr. ROBERTS. I understand they are taken in only on probation in the Medical Reserve Corps, but that ought not to make an examination any easier when they want to get into the Navy regularly.

The CHAIRMAN. The examination for entrance into the Medical Reserve Corps is easier than the examination to get into the Navy.

Mr. ROBERTS. That is just what I am getting at.

The CHAIRMAN. During the service in the Reserve Corps they take this further study and training, and prepare for the last examination.

Mr. ROBERTS. That is just what I am getting at. They have let the bars down, in other words.

The CHAIRMAN. No.

Mr. ROBERTS. That is the great trouble in getting them into the Medical Corps, the examinations were so rigid, and they have another additional obstacle, which was the lack of what medical men would call adequate compensation when they came in and the small prospect of increased compensation as the years went on. Those two things made it very difficult in the past to get men. Now, it looks to me as if they have made some easy examinations for the Medical Reserve Corps, for the purpose of getting a number of men in there, on a lower standard, so to speak. Then, getting in there, they can take a course of training, and as I understood the admiral to say, they would take an examination before they would take this course of training.

Admiral BLUE. They take an examination to get into the Medical Reserve Corps before they are allowed to take this course of training.

Mr. ROBERTS. Then there is no examination required, taking the course of training, after once in the Medical Reserve Corps?

Admiral BLUE. No, sir.

Mr. ROBERTS. Then I misunderstood.

Admiral BLUE. Then after they have taken this course of training they are examined for entrance into the regular Medical Corps of the Navy.

The CHAIRMAN. And that has a higher standard of examination than the first one, because of their going through the preparatory course.

Admiral BLUE. The Navy wants doctors of more experience than those just out of medical college. At the same time they are required to pass a very stiff academic examination. Those who have several years of practice could hardly expect to pass such an examination without stopping their practice and taking a special quiz course for it. Many can not afford to do this with the uncertain chance of getting in. Under the new system, however, they have to pass only a practical examination to get in the Reserve Corps; and then after a course at the Naval Medical School, they come up against a very stiff examination before being commissioned in the regular service.

Mr. STEPHENS. When a surgeon enters the Medical Reserve Corps how long does he agree to serve the United States, or does he agree to give any particular length of service?

Admiral BLUE. He does not agree to give a particular length of service. He can resign any time he desires.

Mr. STEPHENS. After he enters the Navy regularly, then what?

Admiral BLUE. Then he, of course, is appointed by the President, by and with the advice and consent of the Senate, and is on the same status as any other commissioned officer in the service.

The CHAIRMAN. He can only resign upon the consent of the President?

Mr. STEPHENS. When a young man is educated at Annapolis and then gets his commission, he agrees to serve the United States eight years?

Admiral BLUE. Eight years.

Mr. STEPHENS. That is not exacted of officers previous to or at the time he enters the Medical Reserve Corps or the regular Medical Corps?

Admiral BLUE. No, sir; it is not.

Mr. BROWNING. At what age do you take these young men?

Admiral BLUE. Age?

Mr. BROWNING. Yes. Is there any limit to their age?

Admiral BLUE. Oh, yes. There is a limit to their age. They must be between the ages of 21 and 30 years at the time they take the examination to enter the regular corps.

Mr. BROWNING. And what is the salary?

Admiral BLUE. The salary is the same as that of junior lieutenant.

Mr. BROWNING. When they enter the Medical Reserve Corps they have no salary?

Admiral BLUE. While on duty they get a salary.

Mr. ROBERTS. They are only called, as I understand, the Medical Reserve Corps, and get into actual service in time of war. As explained to the committee here, it was to get a corps of physicians who could be called on in time of war to supplement the Medical Corps of the Navy, and in time of peace, as I have understood it, they get no compensation at all, because they do not perform any service.

Admiral BLUE. Yes, sir; the law permits them to be ordered to duty by the Secretary of the Navy when conditions warrant. This, however, must be at their consent.

Mr. ROBERTS. In time of peace?

Admiral BLUE. In time of peace, in case the services are considered necessary.

Mr. ROBERTS. But it is only when they are serving that they get compensation in time of peace?

Admiral BLUE. Exactly so.

Mr. BROWNING. When serving in the regular corps they get the pay of junior lieutenants?

Admiral BLUE. Yes, sir.

Mr. BROWNING. That is about \$1,700, is it not?

Admiral BLUE. \$2,000 a year.

Mr. ROBERTS. The high branch, except the chief of bureau, is captain, is it not?

Admiral BLUE. Yes, sir; medical director, with the rank of captain.

Mr. ROBERTS. About \$5,000 a year, is it not?

Admiral BLUE. \$5,000 a year.

Mr. STEPHENS. How soon can a junior lieutenant of the regular grade expect promotion?

Admiral BLUE. You mean in the line?

Mr. STEPHENS. Yes, sir.

Admiral BLUE. The man who is now at the foot of the list of junior lieutenants will become a lieutenant in about five years. But the man who becomes a junior lieutenant five years from now will remain in that grade until he is probably 50 years of age unless a change is made in the existing law governing the promotion of officers.

The CHAIRMAN. Under the present law, at the present time, as it works now, captains are reaching the rank at 47 or 49 years of age, are they not?

Admiral BLUE. Yes, sir.

The CHAIRMAN. That was my recollection.

Mr. STEPHENS. Is promotion any more rapid in the Medical Corps than any other branches of the line?

Admiral BLUE. It varies. A few years ago it was much more rapid in the Medical Corps, owing to a large increase in the numbers of that corps. A mention of the length of service of officers recently promoted to the various grades in the line and Medical Corps would be a fair comparison as to promotion in the two corps. The junior captain in the line has had 26½ years of active service since graduation; in the Medical Corps, 25 years. The junior commander in the line, 19½ years; in the Medical Corps, 23 years. The junior lieutenant commander in the line, 12 years; in the Medical Corps, 10 years.

Mr. STEPHENS. At present, Admiral, how long would it be before a junior lieutenant can expect to be senior lieutenant?

Admiral BLUE. The junior lieutenant who is now at the foot of the list will become senior lieutenant in between four and five years.

Mr. STEPHENS. And as soon as senior lieutenant, what can he expect regarding his captaincy?

The CHAIRMAN. Lieutenant commander.

Admiral BLUE. At the present time an officer stays in the grade of senior lieutenant about seven years; but this period will increase considerably from now on.

Mr. ROBERTS. And how long lieutenant commander?

Admiral BLUE. That has been ranging from four to six years. I myself was in that grade four years. Officers recently promoted were in the grade six years.

Mr. ROBERTS. Somewhere in the neighborhood of 12 years from ensign to commander?

Admiral BLUE. It is more nearly correct to say that officers now being promoted to commander have had 19 to 20 years service since graduation. The age at which officers are now promoted to captain is lower than it has been for many years, owing to the small classes graduated 25 to 30 years ago, as well as to the operation of the law governing voluntary and involuntary retirements. This age, which is 47 on the average, will increase from now on until we get back to the condition of several years ago when officers reached the grade of commander at 55, captain at 58, and rear admiral at 60 to 61.

The CHAIRMAN. And that acceleration that took place within the last two years was on account of a small class back 25 years ago?

Admiral BLUE. Yes, sir.

The CHAIRMAN. Admiral, on your estimate last year of \$10,000,000 for 3,800 officers, what was your actual expenditure? You said it was estimated for about 3,800, and you had about 3,300.

Admiral BLUE. All the returns are not yet in, but I understand there will be a very large balance left out of last year's appropriation.

The CHAIRMAN. I wish you would get it and put it in your hearings, what that balance will be on that item, will you?

Admiral BLUE. Yes, sir. Returns that have come in to date indicate a balance of \$926,349.20 in pay of the Navy. Of this amount \$150,177 is the balance on the item estimated for pay of officers.

Mr. WITHERSPOON. Mr. Chairman, the admiral never has completed his answer.

The CHAIRMAN. No; as to the full number of officers.

Mr. WITHERSPOON. He has 3,976 officers down here we are asked to appropriate for, and he has given 2,100 officers in the line and 347 in the Medical Corps. That does not make 3,976. He had not completed his answer.

Admiral BLUE. I am prepared to go on, sir.

The CHAIRMAN. Just give them all, Admiral, and we will not interrupt you until you finish.

Admiral BLUE. The number of acting assistant surgeons allowed by law is 25. There are only 24 in the service now. That makes an increase of 1 to be provided for. As for assistant surgeons in the Medical Reserve Corps—we expect to have 50 of those, which makes an increase. Now, the Dental Corps.

Mr. WITHERSPOON. Will that be the total number included in this 3,976—50?

Admiral BLUE. Fifty will be the number that we expect to have assigned to duty of the assistant surgeons in the Medical Reserve Corps, and in the Dental Corps we expect to have 32. That corps is limited by law to 1 dental surgeon for every 1,500 enlisted men. That makes a total increase of medical and dental officers of 137. When it comes to the Pay Corps, we have now 221. There are 10 additional to be appointed to fill up the corps. An allowance is therefore made for increase of 10. The allowance is made for 24 chaplains, the number allowed by law, making an increase of 1 over what there were on January 1, 1913.

Professors of mathematics, the number allowed by law is 15, an increase of 1 over what we had last year. Construction Corps, 75 allowed by law, an increase of 1 over what we had last year. Civil Engineer Corps, 41 allowed by law, an increase of 4 over what we had last year. Warrant officers, we have 862. Under the normal increase of warrant officers per year under the law, we expect to have 173 more than last year, and that number we have estimated for. That makes a grand total of 3,977, and the number we had on January 1, 1913, was 3,258, making an increase in the estimate of 719 officers in the various corps, including warrant officers. This means that in June of 1915 we expect to have 719 more officers of all classes than we had a year ago, January 1, 1913, the date from which the estimate was made for two and one-half years ahead.

Mr. ROBERTS. Admiral, let me ask you a question here, if I understand your figures, you make no provision for the increase in the Corps of Chaplains, recommended by the Secretary?

Admiral BLUE. No, sir.

Mr. ROBERTS. Will you be able to take care of an increase something like 37 chaplains in the estimate that you have here, in case Congress should provide them?

Mr. KELLEY. Religious secretaries to be enrolled.

Admiral BLUE. I figure on taking care of those secretaries in this estimate.

Mr. KELLEY. As I understand, the secretaries are different from the chaplains?

Admiral BLUE. Different from the chaplains; yes, sir.

Mr. ROBERTS. Will you be able to care for that additional number of chaplains in the total amount you have here?

Mr. TALBOTT. How many?

Mr. ROBERTS. Thirty-six or seven. The proposition, as recommended, as I understand, is one chaplain to each thousand personnel, and we have a maximum of about 24 chaplains and about 51,000 personnel, which means 67 national chaplains, if that law is enacted.

Admiral BLUE. That would mean about \$100,000 in their pay. This bill would possibly take care of it, but they were not included in the estimate.

The CHAIRMAN. Will you put in your hearings a statement of the amount which you expended upon the pay of the officers, that first item?

I would ask you, also, Admiral, if you can give us what was expended last year under pay and allowance of petty officers, seamen, and other enlisted men. You have asked for \$22,465,873. I would like for you to put into the hearings the amount expended upon that item, and what balance, if any, you have.

Admiral BLUE. Yes, sir; and also on the officers?

The CHAIRMAN. Yes. The item above there, the first item, on the whole amount appropriated last year, \$39,264,000, you have an unexpended balance?

Admiral BLUE. Last year—expended on officers last year, \$9,642,712.78; balance, \$150,177.22; expended on petty officers and enlisted men, \$21,110,709.81. This was \$18,000 more than the estimate.

The CHAIRMAN. Yes.

Admiral BLUE. I understand there is a considerable balance, but I have not been able to get it exactly, because the returns are not all in. Indications are, however, that it will be over \$900,000.

The CHAIRMAN. That is, on the total appropriation?

Admiral BLUE. The total appropriation.

The CHAIRMAN. Will you put into the hearings the unexpended balance last year on the whole amount?

Admiral BLUE. On the whole amount—yes, sir. The balance up to date is \$926,349.20.

The CHAIRMAN. Then, return to this matter of the chaplains.

Mr. ROBERTS. Mr. Chairman, before we leave the item we were on, I wanted to ask the Admiral about one item here—payments to beneficiaries of officers and men. Just what is the nature of those payments?

Admiral BLUE. Six months' pay, if the officer or man dies in the service while on the active list.

Mr. ROBERTS. I had in mind the men leaving their pay, providing where any pay might go in case of death. This is a provision of law for six months' pay?

Admiral BLUE. Yes, sir. This gratuity can only go to a wife or child or to a dependent relative previously designated, if there is no wife or child.

The CHAIRMAN. Admiral, I want to ask you a question with reference to this: The Bureau of Navigation estimates for the pay of the Navy?

Admiral BLUE. Yes, sir.

The CHAIRMAN. What do you think of the advisability and the propriety of having the estimates for that prepared and submitted by the Bureau of Supplies and Accounts from the paymaster's office?

Admiral BLUE. I have no objection to that at all. I think the Bureau of Supplies and Accounts have at hand better facilities for accurately estimating the pay after it has been furnished by the Bureau of Navigation with the estimated number of officers and men.

The CHAIRMAN. It has occurred to me that they, having to deal with this money phase of the question, it coming under their control and the bookkeeping, and they keep all the accounts and have the unexpended balances and everything that comes under them, that it could be very well transferred to the Bureau of Supplies and Accounts and estimated for more accurately there than it could be under the Bureau of Navigation.

Admiral BLUE. I think so myself, sir. The Bureau of Navigation, of course, would have to estimate for the number of officers and men and turn that estimate over to the Bureau of Supplies and Accounts.

The CHAIRMAN. I understand you would do that, but you had furnished them certain information from your office.

Mr. ROBERTS. That is really the converse of the present method, is it not?

The CHAIRMAN. They estimate now in the pay office. They have to go to Supplies and Accounts to know how much has been paid and what balances there are.

He has to get that information from there, and it just occurred to me whether it would be better to have the whole thing come now from Supplies and Accounts, and when they come to how many officers will have to be appropriated for they would just get that information as to that, and all the other calculations and the estimates and provisions and everything of that kind.

We turn to the question of the chaplains. We have the same number of chaplains in the Navy now that we had in 1840, do we not?

Admiral BLUE. In 1842 the bill was passed making the present number.

The CHAIRMAN. That is, there has been no increase during that time?

Mr. TALBOTT. Is there much need of chaplains now?

The CHAIRMAN. It appears they may not use them as much, but there may be more need. I will ask you what is your opinion as to the necessity and the propriety of increasing the number of chaplains?

Admiral BLUE. I think, myself, they are needful on board ship. We have many young men who have been brought up in Christian homes and who are in the habit of going to church. When they go aboard ship and find no religious influences they are too apt to drift away from the precepts of Christian training. There is no doubt in my mind that the higher the moral tone of officers and men the better will be the discipline and efficiency of the ships. Anything that can raise the moral tone will be a distinct gain in efficiency.

We have found that the influence of certain chaplains who are willing to go among the men on familiar terms and gain their confidence and esteem have a great influence for good among them, causing many to refrain from overindulgence on shore and to return to their ships on time in a fit condition for duty. The ships that have such chaplains do not wish to part with them.

Mr. ROBERTS. Is not the discipline on ship better when the chaplain knows his business?

Admiral BLUE. Exactly so; and I think it would be well for the discipline of every battleship to have a chaplain or a welfare secretary of the kind just described.

The CHAIRMAN. Go ahead.

Admiral BLUE. A few months ago a certain chaplain was detached from his ship and ordered on shore duty. Immediately a number of officers of the ship telegraphed me requesting that the chaplain be allowed to remain. They said he was too important a man for the discipline of the ship to lose; and as he himself wanted to remain, we countermanded the order and let him stay.

The CHAIRMAN. I will ask you if you do not think that a good chaplain on the ship would add to the contentment of the men and have a tendency to decrease the disposition to desert?

Admiral BLUE. I believe it would. I believe it would have a good tendency toward bettering conditions in that respect.

Mr. KELLY. What is the rank of a chaplain?

The CHAIRMAN. It runs up as high as captain.

Then, we have at present the limit of 24. I believe we actually have 23 chaplains, as you stated a while ago; one short, I believe you said.

Admiral BLUE. There was one short at the beginning of the year; but at the present time the list is full—24 in all.

The CHAIRMAN. How many of those are afloat?

Admiral BLUE. Eight of those are afloat.

The CHAIRMAN. Since those on shore have the opportunity of attending service ashore, why could not a larger percentage of the chaplains that we have be afloat, the man who is afloat having no opportunity to attend service except on a ship, while the man who is ashore at the stations or home can attend service at any church in the neighborhood of his station where he may be. Why could not a larger per cent of these chaplains be afloat?

Admiral BLUE. I think they will be before long.

Mr. ESTOPINAL. Chaplains for the Navy ought to be aboard ship, it seems to me.

Admiral BLUE. The training stations, as well as large navy yards and receiving ships, have chaplains. Some have two—a Protestant and a Catholic. A part of a chaplain's duties is to visit the sick at hospitals and conduct funerals.

Mr. TRIBBLE. Do they not have churches at those training stations, where these boys can attend service?

Admiral BLUE. In some places they have, but in others churches are not conveniently near.

The CHAIRMAN. I can see very readily why training stations, where they bring young men together in a group, who are not familiar with each other and have not become acquainted and welded together, that a chaplain would serve a good purpose.

Mr. TRIBBLE. That is pretty good argument, and they do not have at other colleges where young men are brought together such religious services provided, and I do not see why the United States Government should undertake to provide the religion of the people. I have been raised in Sunday schools and churches and have been taught to go to church all my life, and I expect to keep it up, but I am not here to provide this body for the Navy. I am here to help provide fighting forces, but I think churches of the country ought to take care of the religious part of it. I am perfectly willing to provide chaplains aboard ships, but I shall resist any other movement on the floor of the House.

Mr. BROWNING. I think there should be a chaplain aboard every ship. I think the Army has one chaplain for each 1,000 or regiment.

The CHAIRMAN. I do not know the number.

Mr. BROWNING. I think that every ship that is afloat in the United States Navy, and especially where they have from 800 to 1,000 men, should have a chaplain aboard of them.

The CHAIRMAN. I presume when you say "every ship," you mean every important ship?

Mr. BROWNING. Oh, yes; I do not mean every little ship.

Mr. WITHERSPOON. I just want to ask the Admiral what sort of ships he thinks we ought to have chaplains on?

Admiral BLUE. On all the large ships.

Mr. WITHERSPOON. Do you mean by that all battleships and cruisers?

Admiral BLUE. In connection with the Secretary's recommendation in regard to the welfare secretaries, I believe he contemplates having a chaplain or two in each division of the fleet, and a welfare secretary on a ship that has no chaplain. With the organization of a fleet, where the ships usually go around in divisions of four or five, although they might not hold services on Sunday on every ship at sea, still, while in port the men from one ship could go over to the one where services are being held.

Mr. WITHERSPOON. And they permit the men to go from one ship to another to attend services?

Admiral BLUE. Yes, sir; every possible privilege is given the men to go ashore for religious services, if they so desire.

Mr. WITHERSPOON. It would not be practicable to have a chaplain on board a submarine or destroyer, would it?

Admiral BLUE. It would hardly be possible.

Mr. BROWNING. I did not mean that, Mr. Chairman. My idea was, you take the crew of a battleship and a cruiser, from 800 to 1,000 men on that ship. I think that in cases of that kind there should be a chaplain aboard of every one of that kind of ships. I do not mean submarines or torpedo boats, or those small craft.

Mr. WITHERSPOON. I did not think you meant that. I did not mean to impute that to you. I just meant to tell the facts about it.

Mr. KELLEY. I remember there was not any at Newport.

Mr. ROBERTS. You mean Portsmouth?

Admiral BLUE. Portsmouth, N. H., you mean?

Mr. KELLEY. Portsmouth, N. H. There were three or four hundred prisoners there, and I do not think there were any chaplains.

Admiral BLUE. There is no chaplain at Portsmouth, N. H.

The CHAIRMAN. Admiral, I wanted to ask you in connection with the subject of chaplains, also the recommendation of the Secretaries with reference to these welfare secretaries. If the committee should consider the question of an increase of the chaplains and also authorization of some of the welfare secretaries, what proportion would be proper? You may not be prepared to answer it now, but I will be glad for you to bear that in mind and incorporate it in your hearings; after you have looked over the situation, and put in your opinion as to what provision should be made. In other words, if there should be a total of 60 chaplains, and in addition some secretaries or whether there should be a fewer number than 60 chaplains and a larger number of these welfare workers, as you say, having chaplains at certain places in the fleet and welfare secretaries working subordinate to them. I would be glad to have you set that out fully.

(The statement referred to is as follows):

DECEMBER 30, 1913.

It is proposed to double the present number of chaplains, making 48 in all, and to appoint 40 welfare secretaries.

The following estimate shows a proposed distribution throughout the service:

	Chap- lains.	Welfare secretar- ies.
Atlantic Fleet: 21 battleships.....	11	10
Atlantic Reserve Fleet: 14 battleships and armored cruisers.....	3	3
Atlantic Torpedo Flotilla: 1 tender, Dixie; 1 flagship; 30 destroyers.....	1	1
Pacific Fleet: 4 armored cruisers.....	2	2
Pacific Reserve Fleet: 2 armored cruisers, 1 battleship, 6 cruisers.....	2	4
Asiatic Fleet: 3 cruisers, 2 gunboats, 1 transport, 2 tenders for torpedo boats and sub- marines.....	3	5
Pacific Torpedo Flotilla: 1 tender, 10 boats.....	1	1
Atlantic Submarine Flotilla: 3 tenders, 15 boats.....	1	1
Pacific Submarine Flotilla: 2 tenders and 10 boats.....	1	1
12 cruisers and large gunboats on cruising duty.....		12
Total at sea.....	25	40

Proposed distribution of chaplains and welfare secretaries (on shore).

	Chaplains.
Four training stations.....	8
Five prisons and disciplinary barracks.....	5
Naval Academy.....	1
Sailors' Home, Philadelphia, Pa.....	1
Naval Hospital, Las Animas, Colo.....	1
Three navy yards and hospitals—Washington, New York, Norfolk.....	3
Olongapo, Guam, Samoa, Guantanamo.....	4
Total on shore.....	23

Making a total of 48.

Mr. BROWNING. Mr. Chairman, may I ask the admiral the object of these 40 welfare secretaries—20 at \$2,000 and 20 of them at \$2,500. What is the object of making the two classes of salaries?

Admiral BLUE. For the purpose of giving them a chance for promotion in case they make good.

Mr. BROWNING. It is a new thing, it seems to me, and I think they should all start in at one price, and that their serving a certain length of time be given a chance to be promoted, if competent.

Mr. STEPHENS. Is it proposed, Admiral, if appointed that some be appointed immediately at \$2,000 and some at \$2,500 rank?

Admiral BLUE. I think not. I think the first employed would take the \$2,000 salary, and then after certain length of service go up to the higher rate.

Mr. BROWNING. That is my idea, that they should not appoint 40 of them, 20 at \$2,000 and 20 at \$2,500, putting them all in to do the same kind of work, if you appoint all. For instance, if you appoint 40 at \$2,000 to start with, and promote after a certain time.

Admiral BLUE. That is my idea of it, sir; that is, that the first appointments should be made at the rate of \$2,000.

The CHAIRMAN. One other thought. The chaplains, as I understand, insist that they can perform all of the duties that would be performed by the welfare secretaries, and that if the chaplains to the number of 60, say, should be appointed, one to the thousand, they could and would perform all of the services. Are you prepared to state upon that question whether that is correct or whether there are certain duties and functions which the secretaries could perform better than chaplains?

Admiral BLUE. I think there are some duties the secretaries could better perform than the average chaplain. Of course, there would be some chaplains, just as there are some chaplains to-day, who would practically do the same sort of work, but all of them would not. It depends altogether on the personality of the man; and possibly upon his age also in certain cases. A young man, like we contemplate having as secretaries, would be on more intimate terms with the crew, would lead them in athletics and in various amusements, and would probably be in closer touch with them than an older man could be.

The CHAIRMAN. What is your idea, and what provision do you propose to submit to keep these welfare secretaries young? When they get into the service they will begin to get old and they will not want to get out, but what provision will you have. Will they be appointed for a definite term?

Admiral BLUE. That is the idea; that they are only temporary appointments.

The CHAIRMAN. Will there be an age limit that will protect the department, so that at a certain time the department can get rid of them and get younger men again? These new secretaries are not going to stay young, and they will be old like the chaplains.

Admiral BLUE. It would be better, I think, not to restrict the age, but to leave the question for the administration to deal with. We could then keep those who had made good in the service, no matter how old they get to be, and discharge others who have demonstrated their unfitness for the work.

The CHAIRMAN. Would they do that? Taking the experience and the observation in the department, it seems that as a man gets old the argument is made, "Are you going to throw an old horse out on the bare pasture and let him starve, when he has served in his younger days?"

Mr. TALBOTT. That will all come up a little later on.

The CHAIRMAN. If we are going to authorize this, the argument seems to be that they want to get young men, but they will not stay young. From experience in the past and considering the pressure that will be brought to bear on the department as they begin to get

old, what do you think along that line? I am not expressing any opinion myself, but just calling your attention to those conditions.

Admiral BLUE. I realize fully that these conditions would probably be brought about and probably be very hard to meet at the time.

Mr. ROBERTS. Mr. Chairman, I would like to ask the admiral a question as to just what would be the status of these secretaries in the Navy. Are they purely civilian employees?

Admiral BLUE. They would be civilian employees.

Mr. ROBERTS. Would they have anything to do with the fighting of the ship in time of battle?

Admiral BLUE. No doubt they would. They would probably take the same position in action that the chaplains now take.

Mr. ROBERTS. If you are going to subject them to the dangers of battle, have you not got to give them a pensionable status, or should not you give it to them?

Admiral BLUE. I should think they ought to have it.

Mr. ROBERTS. Will these men be commissioned in any way, or simply employed?

Admiral BLUE. Simply appointed.

Mr. TALBOTT. Without rank?

Admiral BLUE. Yes, sir.

Mr. ROBERTS. What appointment?

Admiral BLUE. Simply appointed by the Secretary of the Navy as welfare secretary and placed upon the pay roll of the ship.

Mr. ROBERTS. It looks to me that in order to do justice to these men we have got to go a little further than this language and give them pensionable status, because it would certainly be grossly unfair to these men in battle and give them battle stations, and if killed or wounded, then they have no pensions, while there are other men aboard ship who would have pensions under similar conditions.

Admiral BLUE. I think that should be provided for in the bill.

Mr. ROBERTS. Then you are opening up a civil-pension question.

Mr. WITHERSPOON. Admiral, I want to ask you this: I understood you to say an ensign receives a salary of \$1,800.

Admiral BLUE. An ensign?

Mr. WITHERSPOON. Is that right?

Admiral BLUE. \$1,700.

Mr. WITHERSPOON. Do you remember the salary of a second lieutenant?

Admiral BLUE. In the Army or Marine Corps?

Mr. WITHERSPOON. In the Navy.

Admiral BLUE. We have no second lieutenants in the Navy.

Mr. WITHERSPOON. What is the next rank?

Admiral BLUE. Junior lieutenants, called lieutenant, junior grade.

Mr. WITHERSPOON. That is the next after the ensign?

Admiral BLUE. The next after the ensign.

Mr. WITHERSPOON. Then what is the next after that?

Admiral BLUE. The next after that is lieutenant.

Mr. WITHERSPOON. What is their salary?

Admiral BLUE. A lieutenant's salary is the same as that of a captain in the Army.

Mr. WITHERSPOON. What is that?

Admiral BLUE. It is \$2,400 a year plus 10 per cent for each term of five years' service.

Mr. WITHERSPOON. Here is the point I want to get at. I want to ask you why these secretaries should be paid more than educated officers. We generally pay preachers and people that engage in religious work less than other men. Why are these put up above educated officers?

Admiral BLUE. The pay of an ensign is \$1,700 a year; at sea, \$1,870. Lieutenants, junior grade, \$2,000 a year; at sea, \$2,200 a year. Lieutenants, \$2,400 a year; at sea, \$2,640 a year.

Mr. WITHERSPOON. Those men whose education costs \$18,000. Why should these secretaries be chartered with \$2,000, and increased to \$2,500?

Admiral BLUE. Well, they should be well-educated men themselves—college graduates, in all probability, many of them would be.

Mr. ROBERTS. Just a moment, in regard to that status; I want to develop that still further. How would these secretaries be treated aboard ship, as commissioned officers, chief petty officers, or petty officers, enlisted men? Where would they be quartered aboard ship?

Admiral BLUE. They would be quartered in the officers' mess.

Mr. ROBERTS. And be treated as officers?

Admiral BLUE. And be treated as officers.

Mr. ROBERTS. What mess, junior officers?

Admiral BLUE. Most likely with the wardroom officers.

Mr. TRIBBLE. Admiral, is it expected by the department that a chaplain and one of the welfare secretaries both shall be upon a battleship?

Admiral BLUE. It is not, sir; it is intended to have the welfare secretaries on ships that would not carry chaplains, but in the same division where there is a chaplain, and who would be under the general supervision of a chaplain.

Mr. TRIBBLE. I want to ask you this, and to have it put in the record, because I am sure you can not answer it now: How many chaplains and where are they stationed this fiscal year, where each one of them have been stationed?

Admiral BLUE. You wish me to put that in the record?

Mr. TRIBBLE. I wish you would put that in the record, so that we can see what you have been doing with the chaplains.

The statement referred to is as follows:

The 24 chaplains are stationed as follows:

Navy yard, Washington, D. C.....	1
Navy yard, Norfolk, Va.....	1
Training station, Newport, R. I.....	1
Training station, Great Lakes.....	2
Training station, St. Helena, Va.....	1
Training station, San Francisco, Cal.....	1
Navy yard, New York.....	2
Naval Home, Philadelphia.....	1
Navy yard and prison, Boston.....	1
Navy yard, Mare Island, Cal.....	1
Naval Academy, Annapolis, Md.....	1
Naval station, Olongapo, P. I.....	1
Recently on sick leave and now awaiting orders to sea.....	1
At sea.....	8
Total.....	24

Mr. TALBOTT. What is the post of a chaplain in case of battle, where is his position?

Admiral BLUE. His station is to assist with the wounded.

Mr. TALBOTT. I can imagine that, but I did not know.

The CHAIRMAN. I would like, Admiral, if you would put into the record, also, the average pay of the chaplains that we have. Take, for instance, the 24 that we have and the average pay of the 24, so that I can have some comparison of their average pay with the suggestion for the pay of these welfare secretaries.

Admiral BLUE. Yes, sir. The average pay of the 24 chaplains is \$3,529.58.

Mr. STEPHENS. Admiral, when a chaplain enters the Navy, what is his rank?

Admiral BLUE. He ranks as lieutenant.

Mr. STEPHENS. And he can eventually reach the rank of captain?

Admiral BLUE. He can reach the rank of captain.

Mr. STEPHENS. Do you think it advisable to permit him to reach a higher rank than that?

Admiral BLUE. I have never believed in military rank for chaplains. I believe that the term "chaplain" ought to be a rank in itself, and not qualified by a military rank or title. A chaplain should bear the same relation toward the officers and crew of the ship that a priest or pastor of a church bears toward his congregation. The idea of military rank is, to my mind, inconsistent with such a relation. In the British Navy a chaplain has no military rank.

Mr. ROBERTS. Is not that commission more for the purpose of fixing his pay and status?

Mr. TALBOTT. You could do that without giving him rank.

Admiral BLUE. The status of a chaplain is well understood in all military services and there is no question as to the consideration and respect given him on account of his cloth and high calling. It needs no military rank to fix it. The pay could be based on length of service. A chaplain has no military authority.

Mr. STEPHENS. Would he be given any more respect aboard a battleship if his rank were higher?

Admiral BLUE. I do not think so. I think the question of military rank should be left out. I do not wish to speak in derogation of our chaplains generally, but I have seen in the past some of them who do what we call "stand on rank"; and rank, of course, especially high rank, is conducive of a spirit of superiority, which is incompatible with a proper relationship between a clergyman and his congregation. A chaplain should, of course, have dignity, but not such as to lessen the mutual sympathy that should exist between him and the crew.

Mr. ROBERTS. Does the rank of captain carry the pay of captain?

Admiral BLUE. It does; it is the same thing.

Mr. ROBERTS. I understood that he only got the pay of lieutenant commander, although he got the rank of captain.

Mr. WITHERSPOON. We have 39 battleships built and authorized and 11 cruisers, which would make 50?

Admiral BLUE. Yes, sir.

Mr. WITHERSPOON. You say these secretaries are not to be on the same ships with the chaplains. How, then, could we have 40 secretaries and 36 chaplains, which would be 76, when we have only got 50 battleships on which you say we ought to have these men?

Admiral BLUE. I had not made an estimate of the number of chaplains. The only estimate is in regard to the welfare secretaries.

Mr. WITHERSPOON. It is put in at 40.

The CHAIRMAN. May I suggest, in that connection, that you could not hope to keep the chaplains on the ship all the time. They would have to have some shore duty, and then there are certain other stations where we would have to have chaplains, I think, to do certain work.

Mr. TALBOTT. They could be changed about from shore to ship.

The CHAIRMAN. Yes.

Mr. TALBOTT. And there would be no difficulty about increased pay if it should be so much the first year and so much the second year. Leave him just have the title of chaplain.

Admiral BLUE. They usually speak of them on board as chaplain, and address them that way.

Mr. STEPHENS. On board a ship, to whom is the chaplain responsible, particularly; under whose direction is the chaplain?

Admiral BLUE. Under the general direction of the captain of the ship.

Mr. STEPHENS. Without intermediate direction?

Admiral BLUE. Of course, the executive officer is the intermediary between all other officers and the captain of a ship; but the chaplain, just as all other heads of departments, has free access to the commanding officer.

Mr. LEE. Admiral, do you not think, if the chaplains were compelled to meet the requirements of the clerk or secretary, that it would give the chaplain something to employ his mind during the day?

Admiral BLUE. I think it would.

Mr. LEE. Don't you think it would work very nicely?

Admiral BLUE. Some of them, as I said a while ago, do similar work now.

Mr. LEE. And I should think they would be glad to have it to do, on account of keeping their minds employed. I do not think it is well to gather up a lot of men and put them on the ships. You will have the contention, as you have with the men in the Army, such as carpenters, mechanics, etc., who are now looking for pensions, and they have no status.

Mr. ROBERTS. Admiral, I think you are mistaken about the pay of the chaplains. I see here in the Navy Pay Book that they begin with the rank of junior grade, lieutenant, at \$2,000 a year—this is their pay, with the corresponding figures—after 5 years \$2,200, 10 years \$2,400; then next ranks they get is lieutenant and they start in at \$2,400 and after 5 years \$2,640. That seems to be the limit of their pay, although we know they do get the rank of commander and captain, but their pay does not go above the basis of lieutenant commander.

Admiral BLUE. I think there has been some change in the law in the last 10 years in regard to the pay of chaplains.

Mr. ROBERTS. These are the acts of May 13, 1908, March 3, 1909, June 24, 1910, in regard to the Navy pay. So, these would be the latest acts governing the pay of all branches of the Navy. As I understand the chaplains have the rank of captain and get certain allowances as captains, but they do not get the pay and the chaplain

gets no higher pay than that of lieutenant commander, excepting as he gets these additional longevity increases.

Admiral BLUE. My impression is that prior to 1908 chaplains had a fixed pay not based on rank, and that during that year a law was passed giving all commissioned officers the pay of their rank, providing, that chaplains subsequently appointed would not receive higher pay than that of lieutenant commander. I am not sure of this and would not like to put it down as a positive statement, but it is my impression.

Mr. ROBERTS. I wish you would look that up and let us know.

Admiral BLUE. I will do so. After looking the matter up I find that a chaplain gets no higher pay than that of a lieutenant commander.

Mr. ROBERTS. That might mean two chaplains getting the pay, one of commander and the other of captain.

Admiral BLUE. Those who now have the rank of captain or commander are getting the pay of lieutenant commander.

The CHAIRMAN. Now turn to page 43. There is one little item that is under Bureau of Navigation.

Mr. ROBERTS. Just one more word before we get away from the subject of chaplains and secretaries. Are you familiar, Admiral, with the so-called Chaplain's bill, being urged in Congress, one for each thousand personnel?

Admiral BLUE. I have not seen the bill.

Mr. ROBERTS. As I understand that bill, it provides that these new chaplains shall come into the service on appointment for three years, and can resign at any time after three, or can be removed at any time during those three years, and if they have made good at the expiration of three years they get full permanent appointment. That gave me a thought with regard to these welfare secretaries. In case the committee and Congress saw fit to adopt that provision, do you not think it would be a good plan to have these welfare secretaries given a probationary appointment of two or three years, to ascertain whether they were going to be qualified to perform the duties they would be called upon to perform?

Admiral BLUE. I think it would be a wise provision.

The CHAIRMAN. If I understand it, if I may interrupt, the whole thing is probationary; they are appointed subject to continuance by the Secretary, and he can in one year——

Mr. ROBERTS. It does not say so.

The CHAIRMAN. Not giving them time; they are subject to removal by the Secretary at any time.

Admiral BLUE. He may revoke the appointment at any time.

The CHAIRMAN. He may revoke the appointment at any time, it being an appointment without definite term.

Mr. ROBERTS. Do you not think it better, Mr. Chairman, to have these men on a probationary period and the full appointment come after a recommendation from the officers of the ships rather than to have the men left on indeterminate appointment and their removal brought about only on complaint? That is what it would mean. The only way you could get one of them removed would be by complaint from the officers of a ship, because the Secretary and the department would not be following the career of these men to know whether they were making good or not and you would have no

positive way of knowing until you got a complaint, and so these men might run through without any method of ascertaining just what they were doing aboard ship; whereas, by giving them a probationary appointment, with full appointment on recommendation, then you have got something to call to the attention of the department whether these men have or have not made good and that some are fit or unfit to continue in that place.

Admiral BLUE. If you, however, should give them a probationary period, the Secretary would not be able to revoke the appointment after a shorter period in case it was fully demonstrated that the man had not the capacity or temperament to make good.

Mr. ROBERTS. That could be expressed in the act creating the place. The Secretary could be given the power to dismiss him at any time within three years. I wanted to get the Admiral's idea. It would have some weight with me and probably with the rest of the committee.

Admiral BLUE. With regard to the welfare secretaries, I think, the tenure of office should be left to the Secretary of the Navy, especially while the new system is in the experimental stage. If they are not appointed permanently or for a definite time the Secretary could revoke appointments whenever he deemed it advisable, and abolish it entirely if it proved unsuccessful. Naturally the officers of the service would be required to report upon the success or nonsuccess of the system as well as upon the qualifications of the individual welfare secretaries. I would not advocate making a permanent corps of these secretaries until after the scheme has been tried out.

The CHAIRMAN. Now turn to page 43, ocean and lake surveys, which is the same as last year.

Admiral BLUE. We had a balance in that appropriation last year of \$1,203.28.

The CHAIRMAN. Is there any reason that that should not be reduced, say, \$10,000?

Admiral BLUE. The amount asked for, \$90,000?

The CHAIRMAN. Yes, sir.

Admiral BLUE. The Hydrographer of the Navy Department states that he will need it all. So many complaints have come to us setting forth the dangers to be encountered in the navigation of the American Samoan Islands that the department has directed a survey of that locality. This will cost about \$22,000. In addition to this the survey of the approaches to the Panama Canal, as well as the coast of Central America leading to it, will require a great deal. After the canal is opened, a survey will have to be made of the Pacific approaches.

The CHAIRMAN. I will ask you, then, to bear that in mind and if you will look over it in connection with your hearings and state whether or not you think upon examination you think that it could be reduced and call our attention to it. You have a balance there.

Admiral BLUE. We expect to spend more this coming year than we did last on ocean surveys as we did not then have as many ships for the work that we now have. I may say that we will soon have the *Leonidas* in commission for survey work.

The CHAIRMAN. That is the one we authorized last year?

Admiral BLUE. Yes, sir.

Mr. LEE. Just one question, Admiral. Who is the Hydrographer?

Admiral BLUE. Capt. Cooper.

Mr. LEE. Can you tell me what position Mr. George Littlehales occupies in that office?

Admiral BLUE. He occupies the position of hydrographic engineer.

Mr. LEE. What are the duties of the Hydrographer?

Admiral BLUE. The Hydrographer is the general manager of the office and of all the work coming under it.

Mr. LEE. What are the duties of Mr. Littlehales?

Admiral BLUE. I could not tell you definitely.

Mr. LEE. I wish you would put that in your hearings, just what his duties are.

Admiral BLUE. What his duties are—yes, sir. He is in charge of the department of chart construction.

The **CHAIRMAN.** Admiral, I have a few questions, and Mr. Roberts desires to ask something.

Mr. ROBERTS. I want to suggest that some other bill or appropriation wants to be considered in connection with that.

The **CHAIRMAN.** I want to ask the admiral a few general questions right here before we turn to equipment. Is mileage paid to officers on boards of inspection for shore stations and for ships, and, if so, why should not actual traveling expenses be paid?

Admiral BLUE. Mileage is paid for travel of both of these boards.

The **CHAIRMAN.** Why should not traveling expenses be paid?

Admiral BLUE. I think it would be more economical to the Government to pay actual traveling expenses.

The **CHAIRMAN.** How much was paid to officers on boards of inspection for shore stations and ships during the last year. Put it in your hearings.

Admiral BLUE. Yes, sir.

(The statement referred to is as follows:)

Mileage paid during the fiscal year ending June 30, 1913.

Board of inspection and survey for ships.....	\$11,091.28
Board of inspection for shore stations.....	1,195.52
Pay Department inspectors.....	4,412.16

The **CHAIRMAN.** I want to ask you the number of officers at private institutions, to specialize in steam engineering and the number at the post-graduate school at Annapolis, and whether or not a promise or requirement is made or obtained from such officers that they will remain in the service after taking the course. You are sending a number of officers, are you not, to take the post-graduate courses at these different private institutions?

Admiral BLUE. Yes, sir.

(See following statement:)

POST-GRADUATE COURSES.

Three officers studying for the Construction Corps are at the Massachusetts Institute of Technology.

Two officers studying for the Corps of Civil Engineers are at the Troy Polytechnic Institute.

There are also maintained post-graduate courses in engineering and in ordnance. These courses are followed partly at the Naval Academy and partly at other institutions. At the present time there are 29 young officers pursuing a post-graduate

course in engineering. Ten of these are at the Naval Academy, 18 at Columbia University, and 1 at Harvard taking a special course in radio electricity.

There are 11 student officers pursuing the ordnance course. Three of these are at the Naval Academy; seven are taking turns at the gun factory, the powder factory, and at private plants that manufacture ordnance material for the Navy; one is taking a special course in chemistry at the George Washington University. These make a total of 45 officers taking a post-graduate course.

The CHAIRMAN. I would like for you to give us the number of those and I would like to have you state whether or not there is any requirement or promise from these young officers that after they take this private post-graduate course that they will remain in the service for any definite time after completing that post-graduate course.

Admiral BLUE. There has heretofore been no definite promise exacted of student officers, except in the case of those who are studying for the construction corps. It is intended to make that rule apply to all others hereafter.

The CHAIRMAN. I would like to have a statement of the number of commissioned command officers on shore duty, both line and staff, exclusive of midshipmen at the Naval Academy. The question will appear here, and you can put it in your hearings. Of course, you have not the statistics here, and we will not expect you to answer.

Admiral BLUE. I have them here.

(The statement referred to is as follows:)

DISTRIBUTION OF OFFICERS OF THE NAVY ON NOVEMBER 1, 1913.

In the following memorandum only officers actually attached to and living on board ships in commission are counted as on sea duty. Shore duty in the United States and shore duty beyond the seas are given as shore duty. Officers under instruction are not counted as performing shore duty, but the officers under instruction are taking the courses under instruction in lieu of other shore duty. Duty on receiving ships is counted as shore duty.

	Number.	Per cent.
COMMISSIONED LINE OFFICERS.		
Total number.....	1,787	.....
Restricted by law to shore duty.....	21	1.2
Under instruction (seagoing officers).....	67	3.8
On sea duty (seagoing officers).....	1,212	68.6
On shore duty (seagoing officers).....	444	25.1
Sick or waiting orders.....	43	2.4
REAR ADMIRALS.		
Total number.....	25	.....
Restricted by law to shore duty.....	5	20.0
Subject to sea assignment.....	20	80.0
On sea duty (seagoing officers).....	9	45.0
On shore duty (seagoing officers).....	10	40.0
Under instruction at War College.....	1	5.0
CAPTAINS.		
Total number.....	88	.....
Restricted by law to shore duty.....	16	.....
Subject to sea assignment.....	72	.....
On sea duty.....	28	38.8
On shore duty (seagoing officers).....	35	48.6
Under instruction at War College.....	7	.....
Waiting orders.....	2	.....
COMMANDERS.		
Total number.....	117	.....
On sea duty.....	61	52.1
On shore duty.....	50	42.8
Under instruction.....	6	.....

	Number.	Per cent.
LIEUTENANT COMMANDERS.		
Total number.....	304	
On sea duty.....	104	51.6
On shore duty.....	93	46.0
Sick or waiting orders.....	4	
Under instruction.....	3	
LIEUTENANTS.		
Total number.....	345	
On sea duty.....	195	56.0
On shore duty.....	138	60.0
Under instruction.....	5	
Sick or waiting orders.....	7	
LIEUTENANTS (JUNIOR GRADE).		
Total number.....	285	
On sea duty.....	159	55.5
On shore duty.....	85	30.0
Under instruction.....	81	
Sick or waiting orders.....	10	
ENGINEERS.		
Total number.....	721	
On sea duty.....	665	92.2
On shore duty ¹	24	3.3
Under instruction.....	15	
Sick or waiting orders.....	17	
MEDICAL CORPS.		
Total number in regular corps.....	292	
On sea duty.....	121	41.4
On shore duty.....	151	51.7
Under instruction.....	3	
Sick or waiting orders.....	17	
Acting assistant surgeons (all on shore duty).....	20	
Assistant surgeons, Medical Reserve Corps:		
On shore duty.....	8	
Under instruction.....	34	
PAY CORPS.		
Total number.....	220	
On sea duty.....	94	62.2
On shore duty.....	118	53.6
Sick or waiting orders.....	8	
¹ Temporary assignments from battleships and armored cruisers to instruct recruits at training stations. 18		
Temporary duty at Naval Observatory in connection with radio establishment, difference longitude		
Paris and Washington.....		3
Physically disabled, awaiting reexamination.....		3
Total.....		94

RETIRED OFFICERS OF THE NAVY ON ACTIVE DUTY.

(Dec. 30, 1912.)

Rear Admiral Frank J. Drake, connection American and British claims arbitration.
 Rear Admiral Seaton Schroeder, preparation of new signal book.
 Capt. Washington I. Chambers, aviation duty.
 Capt. William McC. Little, Naval War College.
 Commander Arthur B. Hoff, Naval Academy.
 Commander Harry Kimmel, Naval Observatory.
 Commander James H. Hetherington, governor, Naval Home.
 Commander Albert L. Norton, Bureau of Ordnance.
 Commander Theodore C. Fenton, general court-martial duty, navy yard, Philadelphia, Pa.
 Commander Walter O. Hulme, general court-martial duty, navy yard, New York, N. Y.
 Commander John M. Poyer, member of board to represent the Navy in connection with the erection of an office building to be leased to the United States for the use of the Navy Department.
 Lieut. Commander Richard S. Douglas, general court-martial duty, navy yard, Norfolk, Va.
 Lieut. John C. Soley, branch hydrographic office, New Orleans, La

Lieut. Oscar F. Cooper, branch hydrographic office, Savannah, Ga.
 Lieut. Virgil Baker, branch hydrographic office, Baltimore, Md.
 Paymaster George W. Reeves, ordered to navy yard, Mare Island, Cal.
 Professor of Mathematics Henry M. Paul, temporary duty, Department of Justice.
 Naval Constructor Frank B. Zahm, inspector of electrical material, General Electric Co., Schenectady, N. Y.
 Chief Carpenter Edward H. Hay, Fore River Shipbuilding Co., Quincy, Mass.
 Chief Carpenter Alonzo Burke, custodian, New Orleans, La.

The CHAIRMAN. You can put them in the hearings. I wanted to get a statement of the relative cost of maintenance of prisoners aboard prison ships and in the naval prisons.

Admiral BLUE. Yes, sir. A recent estimate indicates that the average cost of maintenance of a prisoner on the Prison Ship *Southery* is \$360.12 per annum; and at the naval prison, Portsmouth, N. H., \$433.92. This is based on the amount actually spent on prisoners and their guards and does not include the upkeep of the prison or ship.

The CHAIRMAN. And also I would like for you to state your observations as to efficiency and morale, the effect of the two services. I want to say that on my visit up to the prison at Portsmouth, that it occurred to me from my observation that there was an unnecessary rigidity and severity in the punishment of prisoners. Many of them are in there for military offenses.

Mr. ROBERTS. In the prison?

The CHAIRMAN. In the prison. I am not speaking of the ship; I am speaking of the prison. It seemed to me there was an unnecessary amount of severe punishment. There seemed to be more of the idea of punishment than there was of reformation, and that there should be in these prisons a more generous idea of bettering and improving the men who are put in there, especially as the result of military offenses and minor offenses that did not involve moral turpitude and depravity of character, so that the man would come out a better man instead of being subjected to so much rigidity and severity of punishment.

Admiral BLUE. That is what we try to do at the detention barracks.

The CHAIRMAN. I know you are doing that there, and it occurred to me that the same idea could be, to some extent, introduced into the naval prisons; and at least there should not be so much severity of punishment. That is the impression I got.

My approval, and I think that I voice the sentiment and feelings of the members of the committee—the approval of the idea being worked out in these detentionary camps that have been established at Port Royal, S. C., and at Puget Sound should be kept in view for the betterment of the men instead of the idea of simply punishment.

Admiral BLUE. That is the policy of the department now.

The CHAIRMAN. I know it is, and it is with reference to that I was calling attention, and at the same time expressing my opinion of the idea which the department is seeking to do along that line.

Mr. BROWNING. For instance, at Portsmouth there is a prison, and there is also the prison ships. Where do you draw the line of sending prisoners or the persons that shall be punished, either to prison or to the ships; is it certain offenses?

Admiral BLUE. A prison ship may be regarded in a manner as a receiving ship for prisoners, a place where they are held until they can be accommodated in the prison; the prison is kept full to its

capacity, and the prison ship takes care of the excess. Men guilty of offenses of a felonious nature are sent to State prisons. Only those guilty of military offenses are sent to the naval prisons and to prison ships. Many of the latter class whose youth and inexperience as well as previous records indicate that they may be reclaimed to the service are sent to disciplinary barracks. At present about three-fourths of all the prisoners are at disciplinary barracks. Many are transferred to disciplinary barracks from the prisons and prison ships on account of good conduct during a probationary period.

There is only a very small percentage of men in the Navy whose conduct involves prison sentences. These men soon become known on board ship. If they could be summarily discharged by the commanding officer, the service would be better off and the Government save a large amount in prison expenses. It is firmly believed that if one-fourth of the amount now spent on prisons was added to recruiting, the Navy could be well supplied with excellent men, permitting the discharge of the undesirable and dissatisfied. This would make desertion unnecessary as a means of leaving the service, permit the Navy to retain only the desirable men, and thereby maintain better discipline and efficiency, while at the same time reducing expenses by cutting down the enormous expense of prisons and prisoners. A recruit costs the Government \$20 to enlist and \$60 for an outfit, making \$80 in all. The average cost of a prisoner is from \$450 to \$500. Besides, the service of a prisoner is a dead loss. The number of men enlisted is in proportion to the number of recruiting stations. I believe it would be good policy to increase recruiting stations at the expense of prisons.

Mr. BROWNING. The prison there was not full by any means.

Admiral BLUE. In the cases of many who are sentenced by court-martial to a regular prison, the Secretary mitigates the sentence by sending them to a detention camp, especially if they are young men, and the offense is nothing more than a military one.

Mr. ROBERTS. There is just one thing that I wanted to get from the admiral before he goes from punishments. It always seemed to me, since I have been on the committee, that the sentences for naval offenses are, for the most part, too severe for the nature of the offense committed. I wanted to ask the admiral if he has ever given that matter any thought, and whether by regulation or by law in some way we could come down more approximating the ordinary court sentence for a similar offense. As you know, Admiral, there is one feature of the naval sentence that works unusually hard on a man coming in that he not only gets an imprisonment, but he gets a very heavy forfeiture, which amounts to a very heavy fine, and in many instances a landsman would think for a comparatively small offense, so that the punishment was not complete, after he served six months in prison, but goes on for a long time through this taking of his pay.

Admiral BLUE. That is the worst part of it.

Mr. ROBERTS. I have every reason to believe that to a considerable extent desertions are fostered and created by the feelings of the men after they have paid the penalty, so to speak, and served the punishment, of their still being pursued and punished while they should be earning pay, going ahead, and their pay being taken away as part of the penalty of their old offense, which, according to their way of thinking in civil life, would all be wiped out.

Mr. ESTOPINAL. That is the thing they are complaining most about.

Mr. ROBERTS. They reason and think that they are unjustly treated.

Mr. WITHERSPOON. That is not as bad as kicking the men out of the Navy because they get married or get lost in the mountains, or something of that kind.

Mr. ESTOPINAL. That is to punish a man corporally; that is to put him in jail and punish him by jail sentence, and then take his pay besides. I have had several complaints of that kind to come to me.

Mr. ROBERTS. It seems to me too much punishment for the offenses in the cases that have been brought to my attention.

Admiral BLUE. I think the punishments are very severe—too severe, in a great many cases; and I have no doubt that in the very near future this subject will receive the serious consideration of the department, and that something will be done to better conditions.

The CHAIRMAN. I think that can be done, if the officers of the Navy, who are called upon necessarily to constitute courts martial, ascertain that.

Mr. ROBERTS. If revised in the regulations as to the sentence for conviction of a certain offense.

The CHAIRMAN. They always have a maximum and a minimum sentence.

Mr. ROBERTS. Courts-martial have no control over that. We must admit that this idea of stiff punishment in the Army and Navy come down from the olds, when punishments were much more severe than now, and it was thought we should have the harsher kinds of punishment eliminated.

Mr. WITHERSPOON. In regard to these prisons, you say some of them showed too much leniency, so much that the men would rather be there than in the service, and in others too severe punishment was inflicted, according to the temperament of the man in charge of it. Is not the way to correct that for the superior officer, the man in charge of all these prisons, to look after that and make a change in them?

Admiral BLUE. Yes, sir.

Mr. LEE. Admiral, just one question. I would like to return to the Hydrographer's Office and ask you to put in your hearings just how much of that \$90,000 is expended in buying charts outside, and whether you think it would not be better to make the charts right in the office?

Mr. ROBERTS. We provided for that a year or two ago.

The CHAIRMAN. We increased the appropriation, but are we prepared to make all the charts?

Admiral BLUE. Not all of them, no, sir; we have to buy some. It would be undoubtedly better all around if the Hydrographic Office should be able to make all of our charts. Last year \$10,800 was spent for charts made outside.

The CHAIRMAN. We provided an increase for that a couple of years ago.

Mr. WITHERSPOON. Will Admiral Blue be with us to-morrow?

The CHAIRMAN. No, sir.

Mr. WITHERSPOON. What bureau has charge of the experiments that were made about that Alaska coal? You remember we made appropriations to cover that.

The CHAIRMAN. The Bureau of Steam Engineering and the Bureau of Supplies and Accounts.

Mr. WITHERSPOON. This bureau has nothing to do with that?

The CHAIRMAN. No, sir.

Turn now to page 45, and there are three items there I wanted to ask you about, in the distribution of the appropriations carried in the bill for the Bureau of Equipment. I notice that under supplies for seamen's quarters, etc., there is \$230,000 that was allotted to your bureau. That is \$230,000 of the estimates for the coming year?

Admiral BLUE. Yes, sir.

The CHAIRMAN. How much did you expend last year under that item, and how much was unexpended?

Admiral BLUE. There is a balance of a little over \$58,000 from that item.

The CHAIRMAN. Now, then, will you need all of the \$235,000 this year; and if so, tell us why?

Admiral BLUE. I think we will, because I cut out of the estimate \$120,000 for battle compasses. We have an appropriation during the current year of \$120,000 for battle compasses; we had one last year for the same amount. That money is applied to putting battle compasses on all the old ships that had been built before gyroscopic compasses were invented. The general appropriation for new construction goes toward putting the battle compasses on the new ones. I concluded that the \$120,000 we have this year will be sufficient to equip all the older ships that will be fit for the battle line two years hence.

The CHAIRMAN. You are going to suspend, then, on the item of battle compasses?

Mr. ROBERTS. It is going to be an indefinite suspension, then, of that item?

Admiral BLUE. That will probably be all we will spend on the old ships. Ships like the *Oregon*, *Massachusetts*, *Indiana*, and *Iowa* are growing obsolete and will probably not be used in the first line; so it appears useless to equip them with battle compasses at a cost of \$10,000 each.

The CHAIRMAN. I notice under that last item are aviation outfits. We were discussing aviation the other day. Do you expect to have need for an increase of aviation outfits?

Admiral BLUE. No, sir. This is a very small item. What we spend on aviation outfits under this appropriation is a very small amount.

Mr. ROBERTS. What does it consist of, Admiral?

Admiral BLUE. It consists of suits and headgear for the flyers, boots worn by the men in launching and hauling out the hydroplanes and flying boats, and instruments for measuring and recording speed and altitude. The item is not very considerable in amount.

The CHAIRMAN. Then I see you have another item under that of \$100,000, page 46, for the purchase of all other articles of equipage at home and abroad and for the payment of labor in equipping vessels therewith, and manufacture of such articles in the several

navy yards. What, if any, unexpended balance did you have in that?

Admiral BLUE. The unexpended balance for the whole appropriation was a little over \$58,000.

The CHAIRMAN. Your \$58,000 was the unexpended balance of the total, \$423,000, that you have cut out of the whole appropriation allotted last year?

Admiral BLUE. The whole appropriation.

The CHAIRMAN. And it did not relate solely to that item?

Admiral BLUE. No, sir.

The CHAIRMAN. And out of the appropriation you have cut out \$120,000?

Admiral BLUE. \$120,000.

Mr. ROBERTS. Just one question there, Admiral. I notice contingent bureau equipment, \$3,200. Was that for entire equipment?

Admiral BLUE. Just the portion allotted to the Bureau of Navigation.

Mr. STEPHENS. I notice Supplies and Accounts, \$260,000?

The CHAIRMAN. On page 46 you will notice in the distribution, at the top of the page, it is distributed among the different bureaus, and the item you refer to belongs to another bureau.

Mr. STEPHENS. It is page 46.

The CHAIRMAN. On that page you will notice in the distribution, at the head of the columns, out of Equipment appropriation, Navigation so much, Construction and Repair, Steam Engineering, and so much for Supplies and Accounts.

Mr. STEPHENS. That does not answer my question. It refers to the removal and transportation of ashes from ships of war. What does that mean?

Admiral BLUE. In most harbors ships are not permitted to dump their ashes. Every day a lighter must be provided to go alongside, receive the ashes, and take them to sea or to some place ashore and dump them.

Mr. STEPHENS. There are very few harbors in which you can dump them?

Admiral BLUE. Very few.

The CHAIRMAN. The committee will now adjourn to meet to-morrow morning at 10.30, when we will consider the appropriation for "Supplies and Accounts."

(Whereupon at 12.45 o'clock p. m. the committee stood adjourned to meet to-morrow (Friday), December 12, 1913, at 10.30 o'clock a. m.)

APPENDIX A.

MEMORANDUM SHOWING METHOD OF FIXING NUMBER OF OFFICERS OF THE VARIOUS GRADES AND RANKS OF THE NAVY IN THE ESTIMATES FOR "PAY OF THE NAVY FOR THE FISCAL YEAR 1915."

The Navy list, date of January 1, 1913, is used as a basis. From it are taken out:

- (a) The actual retirements, deaths, resignations, and dismissals for the fiscal year 1913.
- (b) The actual (age) retirements and probable retirements (40 above the grade of lieutenant, junior grade) for the fiscal year 1914.
- (c) The actual (age) retirements for the fiscal year 1915.

The figures below show the actual number of officers of the Navy on January 1, 1913, and what is expected to be the actual number on June 30, 1915:

	Actual number January, 1913.	Ex- pected number June, 1915.	In- crease.	De- crease.	Remarks.
Admiral.....	1	1			No increase or decrease.
Rear admirals.....	24	24			No increase or decrease due to having same number of additional numbers (6).
Captains.....	95	90		5	Decrease due to having 5 less additional numbers in captains' grade.
Commanders.....	117	121	4		Increase due to having 4 more additional numbers in commanders' grade.
Lieutenant commanders.....	216	205		5	Decrease due to having 5 less additional numbers in lieutenant commanders' grade.
Lieutenants.....	351	351			No increase or decrease.
Lieutenants (junior grade).....	188	670	482		Increase due to regular promotion, in due course, of ensigns upon completion of three years' service.
Ensigns.....	722	638		84	Decrease due to smaller number of graduates from Naval Academy.
Total.....	1,708	2,100	486	94	Increase of 392 line officers due to normal increase by reason of graduates from Naval Academy.
Medical Corps.....	293	347	54		Increase due to estimating for full strength of Medical Corps.
Acting assistant surgeons.....	24	25	1		Increase due to estimating for full strength of authorized number.
Assistant surgeons, Medical Reserve Corps.....		50	50		Increase due to number estimated to be in service June, 1915.
Dental Corps.....	2	34	32		Do.
Total.....	319	456	137		Increase of 137 medical and dental officers due to filling up of Medical Corps and to the appointment of Medical Reserve and dental officers.
Pay Corps.....	221	231	10		Increase of 10 due to filling up of Pay Corps.
Chaplains.....	23	24	1		Increase of 1 due to filling up of corps.
Professors.....	14	15	1		Do.
Construction Corps.....	74	75	1		Increase due to filling up of corps.
Civil Engineering Corps.....	37	41	4		Do.
Warrant officers.....	862	1,035	173		Increase due to estimated increase of boatswains, gunners, machinists, carpenters, 1913-14—something like 20 of each, each year, or 160 in all—difference made up by appointment of pay clerks.
Grand total.....	3,258	3,977	813	94	Total increase of 719 officers of the Navy due to various increases enumerated above.

Pay of 3,976 officers on the active list.

Appropriation 1914, 3,821 officers.....	\$10,770,792
Estimate 1915, 3,976 officers.....	11,058,644

Increase, 155 officers.....	287,852
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Commutation of quarters for officers.

Appropriation for 1914.....	\$440,576
Estimate for 1915.....	500,000

Increase.....	59,424
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The actual amount expended for commutation of quarters for officers for the last quarter of the fiscal year 1912 and the first three quarters of the fiscal year 1913, as shown by the books of the Bureau of Supplies and Accounts, was \$495,375.87, and the estimate of \$500,000 which is submitted for the fiscal year 1915 is based upon the actual amount paid.

Allowance for heat and light.

Appropriation for 1914.....	\$151,882
Estimate for 1915.....	225,000
Increase.....	73,118

The actual expenditures for heat and light for the fourth quarter of the fiscal year 1912 and the first three quarters of the fiscal year 1913, as shown by the books of the Bureau of Supplies and Accounts, was \$221,534.88, and the estimate of \$225,000 is based upon these actual expenditures.

Pay of 900 midshipmen under instruction.

Appropriation for 1914, \$600 each.....	\$540,000
Estimate for 1915, \$600 each.....	540,000

There are at present 870 midshipmen at the Naval Academy, and this number will probably be increased to over 900, the number estimated for, during the fiscal year 1915, as, in accordance with the recent act of Congress, the full quota now allowed is 1,189.

Pay of officers on the retired list.

Appropriation for 1914, 975 officers.....	\$3,189,761
Estimate for 1915, 1,026 officers.....	3,099,433
Increase of officers, 51 (reduction).....	90,328

This reduction is based on the reduction in the estimated rate of pay received by the officers on the retired list, the average rate of pay being ascertained by dividing the number of officers on the retired list by the actual amount paid, as shown by the returns of the Bureau of Supplies and Accounts, the average rate for the fiscal year 1912 being \$3,020.89.

Pay and allowances of 48,000 petty officers and other enlisted men.

Appropriation for 1914.....	\$21,887,424
Estimate for 1915.....	22,465,873
Increase.....	578,449

The average pay per month per man for the fiscal year 1912, upon which the estimates for 1914 were based, was \$37.99, while the actual pay per month per man for the fiscal year 1913, upon which the estimate for the fiscal year 1915 is based, is \$39.00325, an increase of a little over \$1 per month per man.

Reports are annually received from vessels and stations showing the actual pay per month of all enlisted men borne on the pay rolls on the 31st day of March of the latest fiscal year.

These reports show the number of men on the roll, their ratings and base pay, and the additional pay received under each of the following items: Service increase under reenlistment; under continuous service; for good-conduct medals; for certificates of qualification from schools of instruction and for other permanent pay; also the number of men in each rating who are receiving pay as "gun pointers" and for details to other special service.

These reports are consolidated and tabulated to show the total number of men, the total pay for each rating, and the average pay per month per man under the items mentioned, as of date of March 31, 1913.

The average pay per month per man thus obtained for each item of pay is used as the factor to determine the amount for which estimate should be submitted for the desired number of men.

Pay of 3,500 apprentice seamen at training stations and on board ships.

Appropriation for 1914.....	\$742,749
Estimate for 1915.....	742,637
Reduction.....	112

The average pay per month per man of apprentice seamen is \$17.68. This estimate is obtained in the same manner as that for 48,000 men.

Pay of enlisted men on the retired list.

	Per month.
Appropriation for 1914.....	\$340,005
Estimate for 1915.....	359,127
Increase.....	19,032

An approximate amount of pay per month for each man on the retired list is made up as follows:

Pay.....	\$55.00
Allowances in lieu of rations and clothing.....	9.50
Allowances in lieu of quarters, fuel, and light.....	6.25
Total pay and allowances per month.....	70.75

Based on the actual rate of pay now received.

During the past fiscal year 48 men were placed on the retired list and 19 of those already on the retired list died during the fiscal year 1913, making an increase of 29 during the year. This, however, averaged with the previous year, makes an approximate average for yearly increase of 28.

Payments upon reenlistments to petty officers and enlisted men holding honorable discharges.

Appropriation for 1914.....	\$650,969
Estimate for fiscal year 1915.....	964,812
Increase.....	313,843

During the fiscal years 1908, 1909, 1910, and 1911, the average percentage of men reenlisting under honorable discharges is 6.88 per cent, while for the years 1912 and 1913 the average percentage of the number of reenlistments was 10.777 per cent. The estimate for the fiscal year 1914 was based upon the average percentage of reenlistments for the fiscal years 1908, 1909, 1910, and 1911, while the estimate for the fiscal year 1915 is based upon the average percentage of reenlistments under honorable discharge for the fiscal years 1912 and 1913. The average rate of pay per month for each man reenlisting under honorable discharge was \$43.46, or \$173.84 for the four months' pay which they are allowed. The estimate for reenlistments under honorable discharge for 1915, based upon the above percentage, is 5,550 men.

Pay of 1,000 enlisted men in prison.

Appropriation for 1914.....	\$335,406
Estimate for 1915.....	353,930
Increase.....	18,524

The average pay per month for each enlisted man in prison for the fiscal year 1912, upon which the estimates for 1914 were based, was \$27.95, while the average rate of pay for each prisoner for the fiscal year 1913, upon which the estimates for the fiscal year 1915 were based, was \$29.49, an increase of \$1.54 per month for each prisoner.

Payments to beneficiaries of officers and men.

Appropriation for 1914.....	\$75,000
Estimate for 1915.....	75,000

It appears from the returns on file in the Bureau of Supplies and Accounts that the amount appropriated for 1914 is approximately correct; therefore, the estimate is the same.

To pay interest on deposits by enlisted men, act of Feb. 9, 1899.

Appropriation for 1914.....	\$34,568
Estimate for 1915.....	34,568

This estimate is approximately the same as the amount expended for the last available fiscal year as shown by the books of the Bureau of Supplies and Accounts.

Pay of the Nurse Corps.

Appropriation for 1914.....	\$89, 520
Estimate for 1915.....	116, 580

Increase.....	27, 060
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This increase is due to the fact that while the number of chief nurses who receive \$1,800 per annum estimated for has been reduced by two, the number of nurses who receive approximately \$631 has been increased by 42.

Rent of quarters for members of the Nurse Corps.

Appropriation for 1914.....	\$15, 920
Estimate for 1915.....	15, 120

Reduction.....	800
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The reduction of \$800 in this item is due to the fact that quarters in kind will be furnished to five chief nurses who have heretofore had quarters hired for them.

[No. 2.]

**COMMITTEE ON NAVAL AFFAIRS,
Washington, D. C., Friday, December 12, 1913.**

The committee met at 10.30 o'clock a. m.

Present: Representative Padgett (chairman), presiding.

**STATEMENT OF REAR ADMIRAL T. J. COWIE, CHIEF BUREAU
OF SUPPLIES AND ACCOUNTS.**

The CHAIRMAN. Gentlemen, we have with us this morning Paymaster Gen. Cowie, chief of the Bureau of Supplies and Accounts.

Admiral, I believe you begin with "Pay, miscellaneous," at page 8. I notice that you have in the bottom of the page a line of new language, Admiral, "Actual expenses of officers while on shore patrol duty."

Admiral COWIE. These expenses are now paid from the appropriation "Contingent, Navy," but it is considered proper that they should be paid from the same appropriation as other traveling expenses—"Pay, miscellaneous."

The CHAIRMAN. That has been transferred from the contingent appropriation to "Pay, miscellaneous"?

Admiral COWIE. To "Pay, miscellaneous," although we have not increased the appropriation.

Mr. ROBERTS. How much do these expenses amount to, Admiral?

Admiral COWIE. The patrol duty?

Mr. ROBERTS. Yes. Just what is the nature of that?

Admiral COWIE. Shore patrol is a force landed from the ships of the fleet to maintain order among liberty men. It is landed at the direction of the senior officer present, who usually supplies four masters-at-arms and four petty officers to assist a commissioned officer and a midshipman with the liberty party on shore. There is always a patrol to look after that.

The CHAIRMAN. Then, I see on page 9 you insert "religious books" as new language.

Admiral COWIE. Heretofore no appropriation has specifically provided for the purchase of religious books for use in the instruction of enlisted men. While most of the religious books required have been donated by persons or organizations, purchases have occasionally been authorized from the appropriation, "Pay, miscellaneous," or from the appropriation, "Equipment of vessels," as a part of ships' libraries.

It is felt that the right to purchase such books as may be required should be specifically recognized, and for that reason the words "religious books" have been included in the appropriation, "Pay, miscellaneous."

The CHAIRMAN. You have been heretofore buying these books under other appropriations?

Admiral COWIE. Some under "Equipment of Vessels," but very few have been bought, because we did not feel really authorized to buy them.

Mr. BROWNING. Your appropriation covers any other books, does it not?

Admiral COWIE. Yes, sir.

Mr. BROWNING. I do not know why you should make any discrimination.

Admiral COWIE. Principally technical books and books for ships' libraries have been purchased, and some of the chaplains wanted provision made, and the Secretary approved, so we have put it in, but have not increased the appropriation.

The CHAIRMAN. I notice just a line or two below you insert the word "all" before the word "newspapers," and after that word you insert "and periodicals for the naval service."

Admiral COWIE. It is for the reason that a considerable saving in the purchase of technical periodicals for the use of the various offices in the Naval Establishment can be made if proposals to furnish the same are advertised by the Bureau of Supplies and Accounts, and a single contract made. At the present time professional periodicals are purchased and paid for from about 21 different appropriations, which renders it exceedingly difficult to make a consolidated purchase, and requires the preparation of numerous vouchers and much unnecessary paper work. The amount involved is estimated at \$5,000 a year; and if this language is inserted in the appropriation "Pay, miscellaneous" use of other appropriations for such purposes would be discontinued.

The CHAIRMAN. You do not insert the word "professional" before the word "periodicals." Is that intended to be used for the purchase of professional books?

Admiral COWIE. Not professional books. We have left them out purposely, because professional books are purchased from time to time as required under the appropriations of the different bureaus. The language "all newspapers and periodicals for the naval service" is used in order to get anything the department requires. To limit them to one class as "professional," might preclude the purchase of another class, such as "technical," under various rulings of the accounting officers of the Treasury.

Ships' libraries are purchased from the appropriation "Equipment of vessels," and include *all kinds of books*.

Mr. ROBERTS. Are there concerns in the country that make a business of furnishing all kinds of periodicals on contract?

Admiral COWIE. Yes; and if we advertised it in one schedule the chances are that we would get them all very much cheaper.

Mr. BUCHANAN. Is not a newspaper a periodical?

Admiral COWIE. It is not so construed.

Mr. BUCHANAN. I so understand them.

Mr. WITHERSPOON. Do I understand that this would just be a transfer from other accounts to this one, or that it would increase the appropriation? It involves, you say, \$5,000.

Admiral COWIE. I have not increased the appropriation "Pay, miscellaneous" at all, and the amount being divided up into about 21 different appropriations it is pretty difficult to locate them, but

that would take them out of that hereafter and put them all under one appropriation.

Mr. WITHERSPOON. Do you say that it would decrease the amount?

Admiral COWIE. I think it would decrease the cost very materially.

The CHAIRMAN. In the last line you strike out the word "in" and insert the word "including" just preceding the word "maintenance."

Admiral COWIE. The word "in" appearing in this clause is evidently an error, as it is intended to be "including," and has been so construed by the department and the accounting officers of the Treasury for a number of years. It is suggested that this verbal correction be made.

The CHAIRMAN. Then you insert the new language on the following page, 10, first line, "and in reimbursement of civil officers or employees of the Government for their services and expenses incident to such special instruction in addition to their regular compensation." Why do you want to pay for services in addition to regular compensation?

Admiral COWIE. It is not hard to explain that, and I think you have a letter from the department in regard to it.

The CHAIRMAN. I do not recall any letter.

Admiral COWIE. Throughout the other departments of the Government there are a large number of experts and well-known authorities on scientific and special subjects whose services could be employed to great advantage in lecturing or conducting certain appropriate parts of post-graduate courses for officers of the Navy, if such employment, with compensation, were authorized by law.

There were some payments made at the academy to some people who delivered lectures there, but in a decision dated March 20, 1911, in the case of Mr. Burton McCullum, of the Bureau of Standards, who took leave without pay in order to lecture before the School of Marine Engineering, Naval Academy, at the special request of the Navy Department, the Comptroller of the Treasury held that the payments were illegal under section 1765, Revised Statutes, which reads:

No officer in any branch of the public service, or any other person whose salary, pay, or emoluments are fixed by law, shall receive any additional pay, extra allowance, or compensation, in any form whatever, for the disbursement of public money, or for any other service or duty whatever, unless the same is authorized by law, and the appropriation therefor explicitly states that it is for such additional pay, extra allowance, or compensation.

And under a provision of the act of June 20, 1874 (18 Stat., 109), which reads:

That no civil officer of the Government shall hereafter receive any compensation or perquisites, directly or indirectly, from the Treasury or property of the United States beyond his salary or compensation allowed by law: *Provided*, That this shall not be construed to prevent the employment and payment by the Department of Justice of district attorneys as now allowed by law for the performance of services not covered by their salaries and fees.

This broad field of technical knowledge, which would be of the greatest value in the training and further development of naval officers, is thus inaccessible to the Navy Department, unless given gratuitously, which would be an arrangement little to be depended upon, if at all.

It would seem desirable, therefore, that express authority of law be given to make the services of Government scientists and specialists available, so that on request of the Secretary of the Navy, and with the approval of the heads of their respective departments, they may lecture at the Naval Academy or in connection with post-graduate work and be suitably reimbursed for their services and their expenses while so engaged.

As a matter of fact, some of these people got leave from the department without pay and worked on these lectures, and they were paid at the Naval Academy, but the amount was disallowed and the pay officer was afterwards checked; and this is for the purpose of allowing the department to have the services of these specialists and provide for payment.

Mr. ROBERTS. In the case of this man you speak of from the Bureau of Standards, if I understand, he got no compensation whatever, either from the Bureau of Standards or the Navy Department?

Admiral COWIE. None whatever; he got leave without pay.

Mr. ROBERTS. He took leave without pay in order to give the Navy Department the benefit of knowledge, expecting to be compensated, and yet under the ruling of the Comptroller of the Treasury he lost not only the pay he might have had from the Bureau of Standards but from the department?

Admiral COWIE. He lost his pay and his work, too. He had to pay all expenses and lose all pay during the period he was absent.

Mr. WITHERSPOON. Let me understand that now. Take one of these specialists without a compensation fixed by law. Is it proposed while he is detailed to deliver these special lectures to officers that he will be receiving his regular compensation, and then extra pay, too, at the same time?

Admiral COWIE. This work, which naturally must be done out of office hours, is done by him—that is the idea, to give him extra compensation for it, and practically pay the cost of his work on the lectures and his expenses to and from the place where he delivers them. Of course it puts him to just that much additional expense.

Mr. WITHERSPOON. It is not the idea that he shall cease to perform the duties for which he has a regular compensation?

Admiral COWIE. Not at all.

Mr. WITHERSPOON. He will still get that salary?

Admiral COWIE. These lectures, of course, must be gotten up out of office hours, and the work performed in that way; but I think it would be a great advantage to the department—

Mr. TRIBBLE. As I understand it, you do not propose to pay his expenses, but propose to pay the additional sum for it?

Admiral COWIE. Such sum as the department may decide upon for his work on the lecture and his actual expenses.

Mr. TRIBBLE. Are not these officers sufficiently paid by the Government for what they do? If not, we could be asked to pay them more for their services.

Admiral COWIE. These are not officers of the Navy.

Mr. TRIBBLE. It don't make any difference what department they are in, if they are paid salaries by the United States Government,

their services should belong to the Government, and anything they know in the interest of the Navy and the advancement of the Navy, it seems to me they ought to be willing to impart it to the students.

Mr. WITHERSPOON. You will understand this illustration: Where you take a Congressman who gets \$7,500 a year for all of his time, that would be one case; but suppose they employ one of these instructors for two hours a day and fix a compensation that would compensate him for that much of his time.

Mr. TRIBBLE. If he is not a naval officer, that is all right.

The CHAIRMAN. These are not naval officers, and it is experts in the other departments who perform their full time in the department in which they are employed, but any additional time, extra time out of their regular hours, will be devoted to the preparation of these lectures.

Admiral COWIE. To the work on these lectures.

The CHAIRMAN. The appropriation is the same as last year in the total. What unexpended balance, if any, did you have on that?

Admiral COWIE. It was overobligated \$18,897.08. I have here a comparative statement of the different items included in this from 1909 to 1913:

Comparative statement of appropriation "Pay, Miscellaneous," for 1909, 1910, 1911, 1912, and 1913.

[Navy Department, Bureau of Supplies and Accounts, Dec. 1, 1913.]

Subhead.	1909	1910	1911	1912	1913
Amount appropriated.....	\$723,000.80	\$868,550.00	\$868,550.00	\$1,000,000.00	\$1,000,000.00
Deficiency appropriation.....	49,657.94	140,000.00	40,000.00	103,241.78	.....
Gain on bills of exchange, interest, and sundry credits.....	5,569.26	4,127.58	9,995.69	5,040.61	6,725.22
Total of appropriations and credits.....	778,227.20	1,012,677.58	918,545.69	1,108,282.39	1,006,725.22
A. Commission and interest.....	13,626.34	2,920.87	5,225.67	4,708.34	3,634.06
B. Transportation of funds.....	4,218.55	5,106.28	4,004.81	4,666.21	5,407.76
C. Exchange.....	33,943.62	42,408.79	21,627.07	164,215.59	23,858.47
D. Mileage and traveling expenses of officers.....	296,511.87	351,677.91	328,415.80	328,590.68	301,898.77
E. Traveling expenses of civilian employees.....	31,441.33	38,217.61	39,132.44	34,795.35	34,289.75
F. Traveling expenses of female nurses.....	.....	467.26	2,108.37	2,856.46	5,104.23
G. Rent of buildings and offices not in navy yards.....	2,384.76	4,064.63	13,838.04	17,665.80	19,933.84
H. Expenses of courts-martial, prisons and prisoners, courts of inquiry, etc.....	52,756.32	51,384.15	51,876.86	62,146.30	99,531.13
I. Expenses of purchasing pay offices.....	107,329.20	20,364.96	13,919.72	11,932.58	6,922.09
J. Newspapers and advertising.....	820.42	4,760.50	4,967.54	4,743.19	4,404.80
K. Care of libraries.....	1,080.80	.....	10.80	.....	593.97
L. Relief of vessels in distress.....	.....	4,933.02	50.00	353.74	100.00
M. Quarantine expenses.....	.....	375.73	145.24	.....	.....
N. Reports and professional investigations.....	133.50	5,048.05	2,151.65	153.40	130.00
O. Cost of special instruction.....	5,705.45	6,654.46	6,226.93	9,646.23	16,491.85
P. Maintenance of naval attachés, and information from abroad.....	17,952.78	17,853.96	20,744.69	19,603.99	26,539.59
Q. Ice for the Navy Department and its bureaus.....	11,150.06	18,210.14	11,228.40	2,210.56	3,050.00
R. Postage, telephone rentals, telegrams, and cablegrams.....	87,246.67	84,764.04	71,274.01	81,759.11	87,024.40
S. Necessary and incidental expenses..	24,516.04	12,747.03	14,035.86	12,988.72	13,816.98
T. Labor.....	5,358.01	246,504.68	235,476.55	264,711.48	259,854.99
C. Material from the naval supply account (or naval supply fund)....	19,682.03	23,607.24	37,498.36	54,018.81	63,933.57

Comparative statement of appropriation "Pay, Miscellaneous," for 1909, 1910, 1911, 1912, and 1913—Continued.

Subhead.	1909	1910	1911	1912	1913
V. Miscellaneous transfers; clothing for court-martial prisoners, etc.....	\$51,473.03	\$36,483.88	\$31,848.63	\$33,609.31	\$30,228.63
Expenditures not divided by sub-heads.....	10,396.42	23,778.59	2,718.25	5,297.78	.....
Unliquidated requisitions and contracts.....	8,955.71
Traveling expenses of midshipmen, fourth class, from home to Naval Academy.....	9,867.73
Total expenditures.....	778,227.20	1,012,353.78	918,545.69	1,120,673.63	1,026,622.30
Balance, 1909.....	Exhausted.
Balance, 1910.....	\$313.80
Balance, 1911.....	Exhausted.
Balance, 1912, overobligated.....	\$12,391.94
Balance, 1913, overobligated.....	18,897.08
Analysis of amount shown under unliquidated contracts and requisitions:					
D. Mileage of officers, etc.....	\$3,910.81
E. Traveling expenses of civilian employees.....	1,835.10
F. Traveling expenses of female nurses.....	575.40
H. Expenses of boards, courts, prisoners, etc.....	2,631.30
I. Expenses of purchasing pay offices.....	3.00
K. Care of libraries.....	75.25
O. Cost of special instruction.....	276.38
R. Postage, telephone rentals, telegrams, etc.....	537.64
S. Necessary and incidental expenses.....	70.98
Total.....	8,955.71
Analysis of material drawn from naval supply account, subhead U:					
Ice.....	1,201.71
Navy pay offices.....	2,367.87
Prisons.....	34,792.25
Commandant's offices, labor and other boards.....	34,971.74
Total.....	63,983.57
Analysis of labor, subhead T:					
Navy pay offices.....	107,205.06
Commandant's offices, labor and other boards.....	152,649.93
Total.....	259,854.99

In addition to the \$1,000,000 that was appropriated last year, we gained from exchange the amount of \$6,725.22, which made a total of \$1,006,725.22. The expenses have gone down under exchange, which was very large in 1912—\$164,215.59, but came down last year to \$23,858.47, and deducting that \$6,000 which we gained would leave practically \$17,000, which is very reasonable.

Mr. BUCHANAN. "Exchange," what is that?

Admiral COWIE. Exchange on bills sold in foreign countries, for Mexican dollars and other foreign moneys for maintenance of ships and payments to officers and crew in the currency of the country where they are serving.

The CHAIRMAN. And you have that gain of \$6,000 and something?

Admiral COWIE. We gained \$6,000; yes, sir.

The CHAIRMAN. So you are nearly \$18,000 overobligated?

Admiral COWIE. \$18,897.08.

"Pay, miscellaneous," has these different items; we will start right in: Commission and interest, \$3,500; transportation of funds, \$4,500; exchange, \$25,000; mileage to officers while traveling under orders in the United States, \$240,000. I have everything itemized.

Detailed estimate for "Pay, miscellaneous, 1915" (proposed).

For commissions and interest.....	\$3,500
For transportation of funds.....	4,500
For exchange.....	25,000
For mileage to officers while traveling under orders in the United States....	240,000
For actual personal expenses of officers while traveling abroad under orders and in the United States under orders involving repeated travel, or while on shore patrol duty.....	70,000
For traveling expenses of civilian employees.....	35,000
For actual and necessary traveling expenses of midshipmen while proceeding from their homes to the Naval Academy for examination and appointment as midshipmen.....	10,000
For actual traveling expenses of female nurses.....	6,000
For rent of buildings and offices not in navy yards, including the rental of buildings and offices in the District of Columbia.....	15,000
Expenses of courts-martial, prisoners, and prisons, and courts of inquiry, boards of inspection, examining boards with clerks and witnesses' fees, and traveling expenses and costs of stationery and recording and labor for offices of commandants and labor and stationery for labor boards at navy yards and stations.....	350,000
Religious books.....	250
Expenses of purchasing paymasters' offices at the various cities, including clerks, furniture, fuel, stationery, and incidental expenses.....	116,500
All newspapers and periodicals for the naval service.....	5,000
All advertising for the Navy Department and its bureaus (except advertising for recruits for the Bureau of Navigation).....	4,000
Copying.....	250
Care of library, including the purchase of books, photographs, prints, manuscripts, and periodicals.....	600
Ferriage and tolls.....	100
Commissions, warrants, diplomas, and discharges.....	100
Reports.....	100
Costs of suits.....	100
Relief of vessels in distress.....	100
Recovery of valuables from shipwrecks.....	100
Quarantine expenses.....	100
Professional investigation.....	50
Cost of special instruction at home and abroad, including reimbursement of civil officers or employees of the Government for their services and expenses incident to such special instruction in addition to their regular compensation.....	16,000
Maintenance of students and attachés abroad, information from abroad, and the collection and classification thereof.....	25,000
All charges pertaining to the Navy Department and its bureaus for ice for the cooling of drinking water on shore (except at naval hospitals).....	4,000
Telephone rentals and tolls.....	15,000
Telegrams, cablegrams, and postage, foreign and domestic, and post-office box rentals.....	50,000
Other necessary and incidental expenses.....	3,650

In all, for "Pay, miscellaneous," \$1,000,000; and the money herein specifically appropriated for "Pay, miscellaneous," shall be disbursed and accounted for in accordance with existing law as "Pay, miscellaneous," and for that purpose shall constitute one fund..... 1,000,000

The CHAIRMAN. I want you to put that into your hearings.

Admiral COWIE. That brings out the \$1,000,000; but we must have a clause there, so it can be used in any way; but I want to let the committee see just what items these different amounts cover.

The CHAIRMAN. I will say to the committee that I requested the clerk to notify the chiefs of the different bureaus to submit itemized statements so we could have them, and get them correctly in the bill, so it would appear how much for item, and then we could

put the general clause in just as we have in the Marine Corps and in the Quartermaster Corps, and then you can see how much is required for these different items.

Mr. WITHERSPOON. Then, Mr. Chairman, will not that necessitate this: Changing the amounts in all of their paragraphs where these are included, if you are going to do it that way?

The CHAIRMAN. Yes, sir.

Admiral COWIE. I have that all arranged, where they are to come.

The CHAIRMAN. I asked him to take that up.

Mr. ROBERTS. I understand that it is your idea to incorporate these items in the bill itself. For instance, on page 8, we have commissions and interest, so much money; and transportation of funds, so much money.

The CHAIRMAN. Yes, sir; I thought we would put that in the bill and let the House see what these different items are, and then at the end of the paragraph incorporate the language that we have here as to two or three bureaus, the Marine Corps and the Quartermaster Corps.

Mr. ROBERTS. That may be all discussed later, but it seems to me rather involved to do that.

The CHAIRMAN. We will discuss that, but I wanted to get those specific items in the record, so we can see; that is the idea.

Admiral COWIE. In the event each amount goes in the bill, it will be absolutely necessary to have a clause providing the total shall be regarded as one appropriation and so treated in expenditures and accounts.

Mr. ROBERTS. I think that is going to make us trouble.

Admiral COWIE. At any rate, we will have it in shape so that Mr. Padgett could explain on the floor just what each one of these amounts are for.

The CHAIRMAN. That is what we wanted to get, and the question as to how to incorporate it, we can take up when we come to frame it. That same method is pursued with reference to the Marine Corps and has been for a number of years, and then this last year we incorporated it in the quartermaster's department of the Marine Corps and the Pay Department.

The CHAIRMAN. And you need that full amount, then?

Admiral COWIE. We need that full amount, and I am very skeptical as to whether or not there will not be some deficiency in that.

I have provided, Mr. Padgett—

The CHAIRMAN. I wanted to ask you a question in regard to another matter over there, under "Pay, miscellaneous." It is under miscellaneous, transportation of funds—that is, a method of exchange, etc. I wanted to ask you about pay of the Navy, which is under the Bureau of Navigation, what is your opinion as to allowing the Bureau of Supplies and Accounts to submit estimates for the pay of the Navy.

Admiral COWIE. The estimates for the pay of the Army are submitted by the Paymaster General, and for the Marine Corps by the paymaster of the Marine Corps, and I think that properly the pay of the Navy should be estimated for by and come under the Bureau of Supplies and Accounts, because they have all the returns and ac-

counts pertaining to it. While I do not wish in any way to reflect or encroach on the Bureau of Navigation, they naturally must—

The CHAIRMAN. Let me say for you, that Admiral Blue expresses the same opinion. He says he thinks it ought to be done by the Bureau of Supplies and Accounts.

Admiral COWIE. Admiral Blue takes a sensible view of such things. I think undoubtedly it is the best thing that could be done, and, by request of the chairman of this committee in anticipation of some question coming up in regard to the pay of the Navy, I have made here an analysis of the whole thing—the shore stations, the amount expended for active officers, retired officers, and nurses, divided it up in every way, so that the committee could see just how and where the expenditures are made, the amounts expended by navy yards, all of it, in every shape the committee could possibly want it.

The CHAIRMAN. I will ask you to put them in your hearings as an appendix.

Admiral COWIE. I will be very glad to do that. (See Appendix A.) I also give a detailed estimate for appropriation "Pay of the Navy, 1915" (proposed):

For pay of officers on the active list, <i>including midshipmen</i>	\$11, 098, 644
For pay of the Nurse Corps.....	116, 580
For pay of petty officers, seamen, landsmen, and apprentice seamen, including men in the engineers' force and men detailed for duty with Naval Militia, and for the Fish Commission, 48,000 men; and 3,500 apprentice seamen under training at training stations and on board training ships, at the pay prescribed by law.....	23, 562, 440
For commutation of quarters for officers on shore not occupying public quarters.....	500, 000
For commutation and rent of quarters for members of the Nurse Corps..	15, 120
For allowances for heat and light as authorized by law.....	225, 000
For extra pay to men reenlisting under honorable discharge.....	964, 812
For interest on deposits by men.....	34, 568
For payments to beneficiaries of deceased officers and men.....	75, 000
For pay of officers on the retired list.....	3, 099, 433
For pay of enlisted men on the retired list.....	369, 127

In all, for pay of the Navy..... 40, 050, 724

And the money herein specifically appropriated for pay of the Navy shall be disbursed and accounted for in accordance with existing law as pay of the Navy, and for that purpose shall constitute one fund: *Provided*, That hereafter the words "officers on the active list" in this appropriation shall be construed to include "officers on waiting orders; clerks to paymasters at yards and stations; general storekeepers ashore and afloat, and receiving ships and other vessels; two clerks to general inspectors of the Pay Corps; one clerk to pay officer in charge of deserters' rolls; not exceeding ten clerks to accounting officers at yards and stations; dental surgeon at Naval Academy; forty welfare secretaries, twenty at \$2,000 each and twenty at \$2,500 each, who, under the general direction of the chaplains, shall be the leaders in the religious, moral, and athletic welfare of the ships to which they may be assigned; and as many machinists as the President may from time to time deem necessary to appoint, not to exceed twenty in any one year": *Provided further*, That hereafter the words "commutation of quarters for officers on shore not occupying public quarters" shall be construed to include such commutation for boatswains, gunners, carpenters, sailmakers, machinists, pharmacists, *paymasters' clerks*, and mates, naval constructors, assistant naval constructors, and retired officers employed on active duty as authorized by law; and hire of quarters for officers serving with troops where there are no public quarters belonging to the Government, and where there are not sufficient quarters possessed by the United States to accommodate them, or commutation of quarters not to exceed the amount which an officer would receive were he not serving with troops."

The CHAIRMAN. I notice there are scattered around in several places through the bill, under the Bureau of Navigation, the question of transportation of officers, of enlisted men, under different items and things of that kind. Would it not be better to embrace that under one paragraph?

Admiral COWIE. I have gone through the Navy bill and picked out all transportation of persons, funds, materials, and everything of that nature and have prepared it and brought it here, so as to give you everything for transportation, funds, materials, expressage, etc.

The CHAIRMAN. I would be glad if you would put that in your hearings, and also put in a clause, as I suggested, that would cover the consolidation of transportation instead of having transportation scattered around through a number of paragraphs, consolidate it so that we can have it all under one head of transportation, and then we can have better control of it.

Admiral COWIE. Yes, sir; it is my idea that there should be but one appropriation.

Mr. ROBERTS. I want to ask the Admiral if his analysis shows how much each of the other appropriations should be reduced and how much the particular paragraph should be increased by this?

Admiral COWIE. I have that made up here, giving the transportation and where it is taken from, and the appropriations that should be reduced and the amounts, and then, also, the total amount of transportation, both of materials, funds, and personnel.

The CHAIRMAN. That is what we want. We want to get it down so that we will have some idea what we are appropriating for.

Admiral COWIE. A number of years ago, you will remember, we had freight and transportation under every bureau of the Navy. That was taken up and put in one appropriation, under "Supplies and Accounts," and it has been working very satisfactorily.

Admiral COWIE. The statement I'll prepare will show what is desired.

(The statement referred to is as follows:)

Detailed estimate for appropriation "Transportation of persons, 1915" (proposed).

For mileage to officers while traveling under orders in the United States.	\$240, 000
For actual personal expenses of officers while traveling abroad under orders, and in the United States under orders involving repeated travel, or with traveling recruiting parties, and while on shore on patrol duty.....	73, 000
For actual and necessary traveling expenses of midshipmen while proceeding from their homes to the Naval Academy for examination and appointment as midshipmen.....	10, 000
For actual traveling expenses of female nurses.....	6, 000
For travel allowance of enlisted men discharged on account of expiration of enlistment.....	450, 000
For transportation of enlisted men and apprentice seamen at home and abroad, with subsistence and transfers en route, or cash in lieu thereof.	380, 000
For transportation of indigent and destitute beneficiaries to the Naval Home, and of sick and insane enlisted men, apprentice seamen, and beneficiaries, their attendants, and necessary subsistence and transfers for both, or cash in lieu thereof, to or from hospitals, and transfer of lepers from Guam to the island of Culion, in the Philippines.....	10, 000
For apprehension and delivery of deserters and stragglers.....	10, 000

For traveling expenses of prisoners, their guards, and civilian witnesses.	\$15, 000
For expenses of transportation to their homes of the remains of officers and enlisted men of the Navy and Marine Corps who die or are killed in action ashore or afloat, and of civilian employees who die outside the continental limits of the United States.	15, 000
For transportation of recruits for the naval or the naval auxiliary service before enlistment or after rejection.	22, 000
For traveling expenses of civilian employees.	35, 000

In all, for transportation of persons, \$1,266,000; and the money herein specifically appropriated for transportation of persons shall be disbursed and accounted for in accordance with existing law as transportation of persons, and for that purpose shall constitute one fund.

1, 266, 000

This estimate is made up as follows:

From pay, miscellaneous.	376, 000
From recruiting, navigation.	20, 000
From transportation, navigation.	850, 000
From maintenance, naval auxiliary.	5, 000
From bringing home remains, M. and S.	15, 000
	1, 266, 000

PAY OF THE NAVY.

Detailed estimate for appropriation "Pay of the Navy, 1915," (proposed).

For pay of officers on the active list, including midshipmen.	\$11, 098, 644
For pay of the Nurse Corps.	116, 580
For pay of petty officers, seamen, landsmen, and apprentice seamen, including men in the engineers' force and men detailed for duty with Naval Militia, and for the Fish Commission, 48,000 men; and 3,500 apprentice seamen under training at training stations and on board training ships at the pay prescribed by law.	23, 562, 440
For commutation of quarters for officers on shore not occupying public quarters.	500, 000
For commutation and rent of quarters for members of the Nurse Corps.	15, 120
For allowances for heat and light as authorized by law.	225, 000
For extra pay to men reenlisting under honorable discharge.	964, 812
For interest on deposits by men.	34, 568
For payments to beneficiaries of deceased officers and men.	75, 000
For pay of officers on the retired list.	3, 099, 433
For pay of enlisted men on the retired list.	359, 127

In all, for pay of the Navy. 40, 050, 724

And the money herein specifically appropriated for pay of the Navy shall be disbursed and accounted for in accordance with existing law as pay of the Navy, and for that purpose shall constitute one fund: *Provided*, That hereafter the words "officers on the active list" in this appropriation shall be construed to include "officers on waiting orders; clerks to paymasters at yards and stations; general storekeepers ashore and afloat, and receiving ships and other vessels; two clerks to general inspectors of the Pay Corps; one clerk to pay officer in charge of deserters' rolls; not exceeding ten clerks to accounting officers at yards and stations; dental surgeon at Naval Academy; forty welfare secretaries, twenty at \$2,000 each and twenty at \$2,500 each, who, under the general direction of the chaplains, shall be the leaders in the religious, moral, and athletic welfare of the ships to which they may be assigned; and as many machinists as the President may from time to time deem necessary to appoint, not to exceed twenty in any one year:" *Provided further*, That hereafter the words "commutation of quarters for officers on shore not occupying public quarters" shall be construed to include such commutation for boatswains, gunners, carpenters, sailmakers, machinists, pharmacists, paymasters' clerks, and mates, naval constructors, assistant naval constructors, and retired officers employed on active duty as authorized by law; and hire of quarters for officers serving with troops where there are no public quarters belonging to the Government, and where there are not sufficient quarters possessed by the United States to accommodate them, or commutation of quarters not to exceed the amount which an officer would receive were he not serving with troops.

Consolidated appropriations, based on present appropriations.

MAINTENANCE, BUREAU OF SUPPLIES AND ACCOUNTS.

Subsistence:

For subsistence of officers, seamen, and marines.....	\$6,254,777.00
For commuted rations for seamen and marines, which commuted rations may hereafter be paid to caterers of messes, in case of death or desertion, upon orders of the commanding officers, and for officers on sea duty entitled thereto by law, and midshipmen.	800,000.00
For commuted rations stopped on account of sick in hospital and hereafter credited at the rate of 50 cents per ration to the naval hospital fund.....	225,000.00
For subsistence of officers and men unavoidably detained or absent from vessels to which attached under orders (during which time subsistence rations to be stopped hereafter on board ship and no credit for commutation therefor to be given).....	300,000.00
For subsistence of female nurses.....	26,000.00
For subsistence of Navy and Marine Corps general courts-martial prisoners undergoing imprisonment with sentences of dishonorable discharge from the service at the expiration of such confinement: <i>Provided</i> , That hereafter the Secretary of the Navy is authorized to commute rations of such general courts-martial prisoners in such amounts as seem to him proper, but which shall in no case exceed 30 cents per diem for each ration so commuted.	96,177.50
For the purchase of United States Army emergency rations as required.....	12,000.00
In all, for subsistence of the Navy.....	7,713,954.50

Miscellaneous:

For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards...	100,000.00
For coffee mills and repairs thereto.....	300.00
For expenses of naval clothing factories and machinery for same.	61,487.25
For modernizing laboratory equipment and bringing same up to date.....	2,700.00
For tolls, ferriages, yeoman's stores, safes, newspapers, and other incidental expenses.....	47,000.00
For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under general account of advances: <i>Provided</i> , That the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$598,000.....	1,418,000.00
For reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat food products for the Navy Department.....	20,000.00
In all, for miscellaneous.....	1,649,487.25

Freight:

For all freight and express charges pertaining to the Navy Department and its bureaus, except transportation of coal for the Bureau of Equipment.....	525,000.00
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Total..... 9,888,441.75

In all, for the maintenance of the Bureau of Supplies and Accounts, \$9,888,441.75, and the money herein specifically appropriated for the maintenance of the Bureau of Supplies and Accounts shall be disbursed and accounted for in accordance with existing law as Maintenance, Bureau of Supplies and Accounts, and for that purpose shall constitute one fund.

Consolidated appropriations, based on present appropriations with Bureau of Equipment abolished.

MAINTENANCE, BUREAU OF SUPPLIES AND ACCOUNTS.

Subsistence:

For subsistence of officers, seamen, and marines.....	\$6, 254, 777. 00
For commuted rations for seamen and marines, which commuted rations may hereafter be paid to caterers of messes, in case of death or desertion, upon orders of the commanding officers, and for officers on sea duty entitled thereto by law, and midshipmen.....	800, 000. 00
For commuted rations stopped on account of sick in hospital and hereafter credited at the rate of 50 cents per ration to the naval hospital fund.....	225, 000. 00
For subsistence of officers and men unavoidably detained or absent from vessels to which attached under orders (during which time subsistence rations to be stopped hereafter on board ship and no credit for commutation therefor to be given).....	300, 000. 00
For subsistence of female nurses.....	26, 000. 00
For subsistence of Navy and Marine Corps general courts-martial prisoners undergoing imprisonment with sentences of dishonorable discharge from the service at the expiration of such confinement: <i>Provided</i> , That hereafter the Secretary of the Navy is authorized to commute rations of such general courts-martial prisoners in such amounts as seem to him proper, but which shall in no case exceed 30 cents per diem for each ration so commuted.....	96, 177. 50
For the purchase of United States Army emergency rations as required.....	12, 000. 00

In all, for subsistence of the Navy.....	<u>7, 713, 964. 50</u>
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Miscellaneous:

For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards.....	100, 000. 00
For stationery for commanding and navigating officers of ships, for chaplains on shore and afloat, and for the use of courts-martial on board ship.....	30, 000. 00
For purchase, repair, and exchange of typewriters for ships.....	15, 000. 00
For removal and transportation of ashes from ships of war.....	12, 500. 00
For packing boxes and materials.....	2, 400. 00
For coffee mills and repairs thereto.....	300. 00
For expenses of naval clothing factory and machinery for the same.....	61, 487. 25
For modernizing laboratory equipment and bringing the same up to date.....	2, 700. 00
For the purchase of articles of equipage at home and abroad under the cognizance of the Bureau of Supplies and Accounts, and for the payment of labor in equipping vessels therewith, and for the manufacture of such articles in the several navy yards.....	90, 000. 00
For musical instruments and music.....	18, 000. 00
For mess outfits.....	100, 000. 00
For soap on board naval vessels.....	44, 000. 00
For athletic outfits.....	27, 500. 00
For tolls, ferriages, yeomen's stores, safes, newspapers, and other incidental expenses.....	47, 000. 00
For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under "General account of advances": <i>Provided</i> , That the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$643,000.....	1, 463, 000. 00

Miscellaneous—Continued.

And for reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat food products for the Navy Department..... **\$25,000.00**

In all, for miscellaneous..... **2,033,887.25**

Coal and transportation:

For coal and other fuel for steamers' and ships' use, including expenses of transportation, storage, and hauling the same..... **4,300,000.00**

For maintenance and general operation of machinery of naval coaling depots and coaling plants..... **200,000.00**

For water for all purposes on board naval vessels, and ice for cooling of drinking water, including the expenses of transportation and storage of both..... **300,000.00**

In all, for coal and transportation..... **4,800,000.00**

Freight:

For all freight and express charges pertaining to the Navy Department and its bureaus, except transportation of [coal for the Bureau of Equipment] fuel for ships..... **525,000.00**

Total..... **15,972,841.75**

In all, for the maintenance of the Bureau of Supplies and Accounts, \$15,972,841.75, and the money herein specifically appropriated for the maintenance of the Bureau of Supplies and Accounts shall be disbursed and accounted for in accordance with existing law as "Maintenance, Bureau of Supplies and Accounts," and for that purpose shall constitute one fund.

Consolidated appropriations, based on present appropriations; also including transportation of persons and things.

MAINTENANCE, BUREAU OF SUPPLIES AND ACCOUNTS.**Subsistence:**

For subsistence of officers, seamen, and marines..... **\$8,254,777.00**

For commuted rations for seamen and marines, which commuted rations may hereafter be paid to caterers of messes, in case of death or desertion, upon orders of the commanding officers, and for officers on sea duty entitled thereto by law, and midshipmen..... **800,000.00**

For commuted rations stopped on account of sick in hospital and hereafter credited at the rate of 50 cents per ration to the naval hospital fund..... **225,000.00**

For subsistence of officers and men unavoidably detained or absent from vessels to which attached under orders (during which time subsistence rations to be stopped hereafter on board ship and no credit for commutation therefor to be given)..... **300,000.00**

For subsistence of female nurses..... **26,000.00**

For subsistence of Navy and Marine Corps general courts-martial prisoners undergoing imprisonment with sentences of dishonorable discharge from the service at the expiration of such confinement: *Provided*, That hereafter the Secretary of the Navy is authorized to commute rations of such general courts-martial prisoners in such amounts as seem to him proper, but which shall in no case exceed 30 cents per diem for each ration so commuted..... **96,177.50**

For the purchase of United States Army emergency rations as required..... **12,000.00**

In all, for subsistence of the Navy..... **7,713,954.50**

Miscellaneous:

For fuel, books, and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards... **100,000.00**

For coffee mills and repairs thereto..... **300.00**

For expenses of naval clothing factory and machinery for same.... **61,487.25**

For modernizing laboratory equipment and bringing same up to date..... **2,700.00**

Miscellaneous—Continued.

For tolls, ferrisses, yeoman's stores, safes, newspapers, and other incidental expenses.....	\$47,000.00
For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under general account of advances: <i>Provided</i> , That the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$598,000.....	1,418,000.00
For reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat food products for the Navy Department.....	20,000.00

In all, for miscellaneous..... 1,649,487.25

Transportation of persons:

For mileage to officers while traveling under orders in the United States.....	240,000.00
For actual personal expenses of officers while traveling abroad under orders, and in the United States under orders involving repeated travel, or with traveling recruiting parties, and while on shore on patrol duty.....	73,000.00
For actual and necessary traveling expenses of midshipmen while proceeding from their homes to the Naval Academy for examination and appointment as midshipmen.....	10,000.00
For actual traveling expenses of female nurses.....	6,000.00
For travel allowance of enlisted men discharged on account of expiration of enlistment.....	450,000.00
For transportation of enlisted men and apprentice seamen at home and abroad, with subsistence and transfers en route, or cash in lieu thereof.....	380,000.00
For transportation of indigent and destitute beneficiaries to the Naval Home, and of sick and insane enlisted men, apprentice seamen, and beneficiaries, their attendants, and necessary subsistence and transfers for both, or cash in lieu thereof, to or from hospitals, and transfer of lepers from Guam to the island of Culion, in the Philippines.....	10,000.00
For apprehension and delivery of deserters and stragglers.....	10,000.00
For traveling expenses of prisoners, their guards, and civilian witnesses.....	15,000.00
For expenses of transportation to their homes of the remains of officers and enlisted men of the Navy and Marine Corps who die or are killed in action ashore or afloat, and of civilian employees who die outside the continental limits of the United States....	15,000.00
For transportation of recruits for the naval or the naval auxiliary service before enlistment or after rejection.....	22,000.00
For traveling expenses of civilian employees.....	35,000.00

In all, for transportation of persons..... 1,266,000.00

Freight:

For all freight and express charges pertaining to the Navy Department and its bureaus, except transportation of coal for the Bureau of Equipment.....	525,000.00
For transportation of effects of deceased officers and enlisted men of the Navy.....	100.00
For transportation of funds.....	4,400.00

In all, for freight, Bureau of Supplies and Accounts..... 529,500.00

In all, for transportation of persons, funds, and materials..... 1,795,500.00

Total..... 11,158,941.75

In all, for the maintenance of the Bureau of Supplies and Accounts, \$11,158,941.75, and the money herein specifically appropriated for the maintenance of the Bureau of Supplies and Accounts shall be disbursed and accounted for in accordance with existing law as "Maintenance, Bureau of Supplies and Accounts," and for that purpose shall constitute one fund.

Consolidated appropriations, with Bureau of Equipment abolished and including transportation of persons.

MAINTENANCE, BUREAU OF SUPPLIES AND ACCOUNTS.

Subsistence:

For subsistence of officers, seamen, and marines.....	\$6, 254, 777. 00
For commuted rations for seamen and marines, which commuted rations may hereafter be paid to caterers of messes, in case of death or desertion, upon orders of the commanding officers, and for officers on sea duty entitled thereto by law, and midshipmen.....	800, 000. 00
For commuted rations stopped on account of sick in hospital and hereafter credited at the rate of 50 cents per ration to the naval hospital fund.....	225, 000. 00
For subsistence of officers and men unavoidably detained or absent from vessels to which attached under orders (during which time subsistence rations to be stopped hereafter on board ship and no credit for commutation therefor to be given).....	300, 000. 00
For subsistence of female nurses.....	26, 000. 00
For subsistence of Navy and Marine Corps general courts-martial prisoners undergoing imprisonment with sentences of dishonorable discharge from the service at the expiration of such confinement: <i>Provided</i> , That hereafter the Secretary of the Navy is authorized to commute rations of such general courts-martial prisoners in such amounts as seem to him proper, but which shall in no case exceed 30 cents per diem for each ration so commuted.....	96, 177. 50
For the purchase of United States Army emergency rations as required.....	12, 000. 00

In all, for subsistence of the Navy..... 7, 713, 954. 50

Miscellaneous:

For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards..	100, 000. 00
For stationery for commanding and navigating officers of ships, for chaplains on shore and afloat, and for the use of courts-martial on board ship.....	30, 000. 00
For purchase, repair, and exchange of typewriters for ships.....	15, 000. 00
For removal and transportation of ashes from ships of war.....	12, 500. 00
For packing boxes and materials.....	2, 400. 00
For coffee mills and repairs thereto.....	300. 00
For expenses of naval clothing factory and machinery for the same.....	61, 487. 25
For modernizing laboratory equipment and bringing the same up to date.....	2, 700. 00
For the purchase of articles of equipage at home and abroad under the cognizance of the Bureau of Supplies and Accounts, and for the payment of labor in equipping vessels therewith, and for the manufacture of such articles in the several navy yards..	90, 000. 00
For musical instruments and music.....	18, 000. 00
For mess outfits.....	100, 000. 00
For soap on board naval vessels.....	44, 000. 00
For athletic outfits.....	27, 500. 00
For tolls, ferriages, yeomen's stores, safes, newspapers, and other incidental expenses.....	47, 000. 00

Miscellaneous—Continued.

For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under "General account of advances": <i>Provided</i> , that the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$643,000.....	\$1, 463, 000. 00
And for reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat food products for the Navy Department.....	20, 000. 00
In all, for miscellaneous.....	<u>2, 033, 887. 25</u>

Coal and transportation:

For coal and other fuel for steamers' and ships' use, including expenses of transportation, storage, and hauling the same.....	4, 300, 000. 00
For maintenance and general operation of machinery of naval coaling depots and coaling plants.....	200, 000. 00
For water for all purposes on board naval vessels, and ice for the cooling of drinking water, including the expenses of transportation and storage of both.....	300, 000. 00
In all, for coal and transportation.....	<u>4, 800, 000. 00</u>

Transportation of persons:

For mileage to officers while traveling under orders in the United States.....	240, 000. 00
For actual personal expenses of officers while traveling abroad under orders, and in the United States under orders involving repeated travel, or with traveling recruiting parties, and while on shore on patrol duty.....	73, 000. 00
For actual and necessary traveling expenses of midshipmen while proceeding from their homes to the Naval Academy for examination and appointment as midshipmen.....	10, 000. 00
For actual traveling expenses of female nurses.....	6, 000. 00
For travel allowance of enlisted men discharged on account of expiration of enlistment.....	450, 000. 00
For transportation of enlisted men and apprentice seamen at home and abroad, with subsistence and transfers en route, or cash in lieu thereof.....	380, 000. 00
For transportation of indigent and destitute beneficiaries to the Naval Home, and of sick and insane enlisted men, apprentice seamen, and beneficiaries, their attendants, and necessary subsistence and transfers for both, or cash in lieu thereof, to or from hospitals, and transfer of lepers from Guam to the island of Cullion, in the Philippines.....	10, 000. 00
For apprehension and delivery of deserters and stragglers.....	10, 000. 00
For traveling expenses of prisoners, their guards, and civilian witnesses.....	15, 000. 00
For expenses of transportation to their homes of the remains of officers and enlisted men of the Navy and Marine Corps who die or are killed in action ashore or afloat, and of civilian employees who die outside the continental limits of the United States....	15, 000. 00
For transportation of recruits for the naval or the naval auxiliary service before enlistment or after rejection.....	22, 000. 00
For traveling expenses of civilian employees.....	35, 000. 00
In all, for transportation of persons.....	<u>1, 268, 000. 00</u>

Freight:

For all freight and express charges pertaining to the Navy Department and its bureaus, except transportation of [coal for the Bureau of Equipment] fuel for ships.....	\$525, 000. 00
For transportation of effects of deceased officers and enlisted men of the Navy.....	100. 00
For transportation of funds.....	4, 400. 00
In all, for freight, Bureau of Supplies and Accounts.....	529, 500. 00
In all, for transportation of persons, funds, and materials.....	1, 795, 500. 00
Total.....	16, 343, 341. 75

In all, for the maintenance of the Bureau of Supplies and Accounts, \$16,343,341.75; and the money herein specifically appropriated for the maintenance of the Bureau of Supplies and Accounts shall be disbursed and accounted for in accordance with existing law as "Maintenance, Bureau of Supplies and Accounts," and for that purpose shall constitute one fund.

The CHAIRMAN. Turn now to page 68. You have some new language near the bottom of the page "at the rate of 50 cents per ration."

Admiral COWIE. The rations in the naval hospitals have cost much more than the 30 cents, which is the commuted value of rations; in fact the average cost as stated in a letter from the Surgeon General, has been in the last fiscal year 52.97 cents, and this is for the purpose of reimbursing the naval hospital fund. Heretofore they have been losing on the rations by being given only the 30-cent valuation, and this is for the purpose of giving them more nearly what their rations cost. Of course, in the hospitals, the rations cost much more than outside, because of the special diets, etc.

The CHAIRMAN. What did rations cost for the Navy last year?

Admiral COWIE. Rations cost last year about 37 cents.

The CHAIRMAN. What was it the year before?

Admiral COWIE. It was 37 cents. I estimated 37 cents last year. This year so far, for the first quarter, in this current fiscal year it is 37.0049. So, I have estimated at 37½ cents for the next fiscal year. I have a balance on hand under provisions of \$380,175.27, but that is not due to any decrease in cost of rations. However, we have tried to hold rations down in every possible way, and with the assistance of the commander in chief of the Atlantic Fleet and Pay Inspector McGowan, I think notwithstanding the increased cost of provisions we have held it practically at what it was the year before and I am confident it can be reduced very materially this year. I have here a statement of the cost of provisions for the last four years, all the different items right straight through.

The CHAIRMAN. Will you insert that in the hearing?

Admiral COWIE. I thought it might be interesting to show the cost of every item for the different years. I will be glad to put that in and think it will be of interest to the committee.

Prices of provisions, provisions and clothing depot, fiscal years 1910, 1911, 1912, 1913, and 1914, to Dec. 1, 1913.

Items.	Unit.	1910	1911	1912	1913	1914, to Dec. 1, 1913.
Apples, dried.....	Pound.....	\$0.1074	\$0.139	\$0.1085	\$0.0897	
Apricots, tinned.....	do.....	.06	.0626	.085	.0663	\$0.071
Bacon, tinned.....	do.....	.1978	.199	.1598	.1781	
Beans:						
Dried.....	Gallon.....	.3198	.3542	.3797	.349	
Lima, tinned.....	Pound.....	.0699	.0676	.0683	.0716	.0742
String, tinned.....	do.....	.06574	.0499	.0616	.0692	.062
Beef, corned, tinned.....	do.....	.1266	.165	.1389	.1761	.2170
Biscuit.....	do.....	.065		.065	.07	
Butter:						
Tinned.....	do.....	.35	.36	.326046	.37372	.341
In tubs.....	do.....					.30898
Cocoa.....	do.....	.1185	.105	.098	.11888	
Coffee, green.....	do.....	.0904	.1361		.14678	.1189
Do.....	do.....		.1393	.1560		
Do.....	do.....		.1266			
Corn, tinned.....	do.....	.0606	.0512	.0554	.0442	.0488
Emergency rations.....	Number.....				.30	.30
Extract, vanilla.....	Gallon.....	3.42	3.733	4.22	4.34286	4.11
Do.....	4-ounce bottle.....	.1377	.1439	.169	.15697	.1628
Extract, lemon.....	Gallon.....	8.57	3.299	3.35	3.82	4.18
Do.....	4-ounce bottle.....	.1435	.129	.105	.1516	.1645
Flour, wheat.....	Pound.....	.027	.024	.0266	.022227	.02198
Ham:						
Smoked.....	do.....	.1688	.1789	.179		
Tinned.....	do.....		.261	.3666		
Lard.....	do.....	.1485	.1266	.1159	.1335	
Maceroni.....	do.....	.05596	.0586	.0563	.0622	
Milk, evaporated.....	do.....	.061	.06825	.0682	.0677	.0635
Mustard.....	do.....	.1596	.1518	.1518	.1499	
Peaches:						
Dried.....	do.....	.0911	.0896	.1278	.0797	
Tinned.....	do.....	.0886	.0887	.07783	.0659	.068
Pears, tinned.....	do.....	.1006	.0838	.0991	.06362	
Peanut:						
Split.....	Gallon.....	.2814	.285	.279	.289	
Tinned.....	Pound.....	.0648	.0674	.0694	.0616	.0688
Pepper.....	do.....	.1522	.1534	.1814	.1811	
Pickles.....	do.....	.04625	.0749	.074	.0840	
Pork, salt.....	do.....	.1059	.116	.1129	.1203	
Prunes, tinned.....	do.....	.0697	.0779	.068	.0693	
Raisins.....	do.....	.0692	.0716	.0619	.0644	
Rice.....	do.....	.0296	.0344	.0344	.0445	
Salmon, tinned.....	do.....	.118	.1449	.1635	.1192	
Salt.....	do.....	.011	.01032	.0108	.0111	.011
Strap.....	Gallon.....	.4689	.3949	.3481	.3868	
Spices.....	Pound.....	.23	.23	.2239		
Sugar.....	do.....	.0511	.0454	.0569	.04466	.0488
Tea.....	do.....	.1847	.1789	.1983	.1947	.1917
Tomatoes.....	do.....	.02944	.032	.0423	.0392	.0374
Vinegar.....	Gallon.....	.157	.1875	.1745	.1698	.1690

Purchase of ham, tinned and smoked, has been discontinued on account of the excessive cost of these items. In case of the items left blank under 1914, no purchases have so far been made, these items being usually purchased after Dec. 1.

Comparative cost of fresh provisions, second quarter, fiscal years 1910, 1911, 1912, 1913, and 1914.

NAVY YARD, NEW YORK.

Items	1910	1911	1912	1913	1914
Potatoes:					
Irish.....	\$0.015	\$0.01			\$0.0129
Sweet.....	.025	.025	\$0.0159	\$0.011	.0178
Onions, main crop.....	.0125	.015	.025	.019	.0179
Cabbage, early or late.....	.0125	.015	.0169	.0125	.0179
Sauerkraut.....	.01	.0075	.0125	.007	.0129
Bananas.....	.025	.02	.04	.026	.045
Oranges.....	.03	.02	.035	.02	.0286
Apples.....	.04	.03	.0475	.04	.0396
Lemons.....	.03	.025	.0385	.03	.0233
Fresh beef, in quarters.....	.04	.03	.05	.01	.0466
Fresh pork loins, whole.....	.0846	.085	.0882	.1146	.1298
Fresh veal, in sides.....	.1087	.14	.15	.1415	.144
Fresh mutton, in carcasses.....	.084	.07	.0898	.12	.155
Fresh beef, frozen, in quarters.....	.0923	.07	.0796	.10	.105
Fresh pork loins, frozen, whole.....	.0746	.10	.0882	.1146	.1275
Fresh veal, frozen, in sides.....	.1087	.13	.15	.1415	.144
Fresh mutton, frozen, in carcasses.....	.0773	.08	.0896	.11	.13
Fresh chicken, dressed and drawn, in commercial crates.....	.084	.08	.0798	.095	.105
Fresh turkey, dressed and drawn, in commercial crates.....	.21	.18	.185	.1847	.22
Chicken, fresh, frozen, in commercial crates.....	.24	.23	.23	.2443	.28
Turkey, fresh, frozen, in commercial crates.....	.20	.18	.15	.15	.189
Frankfurter sausages, in 25-pound boxes.....	.235	.18	.19	.22	.26
Pork sausages, in 25-pound boxes.....	.08	.10	.0975	.10	.119
Bologna sausages, in 25-pound boxes.....	.08	.09	.10	.12	.119
Beef tongues, in 50-pound boxes.....	.0625	.09	.0725	.063	.118
Sugar-cured hams, in 100-pound boxes.....	.15	.08	.18	.18	.185
Sugar-cured shoulders, in 100-pound boxes.....	.135	.16	.146	.14	.164
Sugar-cured bacon, in 100-pound boxes.....	.0925	.07	.099	.10	.112
Fresh beef liver, in 50-pound boxes.....		.171	.14	.14	.175
Hamburger steak, in 25-pound boxes.....	.05	.07	.065	.08	.08
Fresh corned beef, in 50-pound boxes.....	.07	.08	.0975	.103	.109
Luncheon meat, in 25-pound boxes.....	.065	.06	.075	.08	.09
Fish, fresh.....	.085	.07	.1125	.11	.144
Bread:	.0496	.042	.0489	.065	.044
Wheat.....					
Graham.....	.0324	.0365	.034	.034	.0325
Rolls.....	.0324	.0365	.034	.034	.0325
Butter, extra creamery.....	.049	.055	.055	.05875	.05
Cheese:	.269	.24	.259	.2847	.307
Full cream.....	.144	.09	.14	.1453	.155
Tinned and boxed.....	.1979	.11	.18	.24	.1848
Eggs, dozen.....	.269	.32	.217	.2395	.2435
Milk, fresh, gallon.....	.195	.235	.205	.22	.23

PORT OF SAN FRANCISCO, CAL.

Potatoes:					
Irish.....	\$0.0098	\$0.01	\$0.0114	\$0.0084	\$0.0099
Sweet.....	.015	.0125	.0225	.025	.0159
Onions, main crop.....	.012	.0125	.0095	.0084	.011
Cabbage, early or late.....	.0085	.009	.0125	.015	.0124
Potatoes, Irish, crated.....	.0142	.0108	.0139	.0115	.01194
Sauerkraut.....	.03	.025	.025	.0325	.0274
Bananas.....	.035	.035	.04	.035	.0425
Oranges.....	.055	.04	.045	.045	.0575
Apples.....	.035	.035	.04	.03	.0268
Lemons.....	.0275	.02	.07	.0375	.075
Fresh beef, in quarters.....	.0725	.092	.10	.11	.1325
Fresh pork loins, whole.....	.1375	.1775	.135	.16	.157
Fresh veal, in sides.....	.0825	.105	.105	.13	.1475
Fresh mutton, in carcasses.....	.09	.105	.0975	.105	.11
Fresh beef, frozen, in quarters.....	.074	.0945	.1025	.1125	.135
Fresh pork loins, frozen, whole.....	.1375	.18	.1375	.16	.157
Fresh veal, frozen, in sides.....	.084	.1075	.1075	.1325	.15
Fresh mutton, frozen, in carcasses.....	.0925	.1075	.10	.1075	.1125
Fresh chicken, dressed and drawn, in commercial crates.....	.20	.22	.20	.225	.25
Fresh turkey, dressed and drawn, in commercial crates.....	.29	.28	.29	.30	.34
Chicken, frozen, in commercial crates.....	.16	.18	.17	.175	.21
Turkey, fresh, frozen, in commercial crates.....	.26	.24	.25	.235	.30
Frankfurter sausages, in 25-pound boxes.....	.0825	.10	.105	.1075	.155

Comparative cost of fresh provisions, second quarter, fiscal years 1910, 1911, 1912, 1913, and 1914—Continued.

PORT OF SAN FRANCISCO, CAL.—Continued.

Items.	1910	1911	1912	1913	1914
Pork sausages, in 25-pound boxes.....	\$0.10	\$0.13	\$0.125	\$0.1275	\$0.1825
Bologna sausages.....	.08	.09	.0925	.0975	.14
Beef tongues, in 50-pound boxes.....	.125	.21	.125	.19	.25
Sugar-cured hams, in 100-pound boxes.....	.14	.185	.1825	.165	.1822
Sugar-cured shoulders, in 100-pound boxes.....	.10	.135	.1025	.105	.1295
Sugar-cured bacon, in 100-pound boxes.....			.18	.18	.2054
Fresh beef liver, in 50-pound boxes.....	.04	.05	.085	.07	.11
Fresh corned beef, in 50-pound packages.....	.06	.09	.07	.075	.0995
Hamburger steak, in 25-pound boxes.....	.0575	.095	.0725	.09	.12
Luncheon meat, in 25-pound boxes.....	.12	.1275	.105	.115	.18
Fish, fresh.....	.07	.05	.075	.0633	.08
Bread:					
Wheat.....	.04	.037	.035	.04	.0385
Graham.....	.029	.029	.025	.037	.0385
Rolls.....	.05	.05	.04	.059	.0675
Butter, extra creamery.....	.27	.295	.26	.324	.315
Cheese:					
Full cream.....	.13	.15	.15	.155	.17
Tinned and boxed.....	.18	.17	.16	.16	.18
Eggs, dozen.....	.275	.28	.245	.294	.297
Milk, fresh, gallon.....	.1998	.40	.40	.40	.40

METHOD OF PURCHASING PROVISIONS FOR STOCK.

In the purchase of provisions for stock the bureau, as in the case of other supplies, goes into the market as nearly as possible at the most favorable times.

Tinned fruits and tinned vegetables are purchased in large quantities at the end of the canning season, when the extent of the pack is known and market prices normally are at their lowest and the new supplies not yet distributed to the trade generally. This gives the bureau very wide competition and opportunity of selection of entire packs from the wholesalers, making it possible to secure deliveries of the entire quantities called for in standard brands.

Butter in tins and tubs for the use of the fleet and cargoes of supply ships is contracted for in the early spring and deliveries are made in the late spring and early summer during the churning season, when the cows are let out onto the new grass and the first abundant supply of cream comes in. At this time butter is usually at its lowest price. The butter is prepared under rigid specifications and every lot is churned and packed under the supervision of experts from the Dairy Division, Bureau of Animal Industry, Department of Agriculture.

To eliminate speculation, payments for butter thus purchased are made on the basis of a differential above the average market price at New York for extra creamery butter, the price being determined weekly by the Dairy Division from market quotations. The differential quoted by bidders covers the expense of packing and transporting the butter to the cold-storage warehouses.

The amount of butter purchased is sufficient to cover the entire output of several creameries and there is much competition between butter manufacturers for the Navy's contracts. On account of the rigid specifications and excellent inspection there is practically no loss from deterioration, although the butter is shipped to all parts of the world.

Flour for the Atlantic Fleet is purchased in quantities of 2,400,000 pounds, deliveries being made in carload lots from time to time, as required at the various navy yards. To eliminate speculation, the price paid is a stipulated percentage per 100 pounds of the market price of a bushel of wheat at Minneapolis, Minn., or Kansas City, Mo., at the option of the bidder. The closing price of wheat on the day the order is received by the miller is made the basis of settlement. In this manner the Government secures any advantage of a drop in the price of wheat and at the same time the miller is protected from loss through a sudden advance in the wheat market.

The CHAIRMAN. I notice you are asking for the same amount this year, except 25 cents. You changed the cents. (After a pause.) No, you are asking a little bit more this year—several thousand more. On page 69 you will notice last year the appropriation was \$7,593,441.75 and that this time it is \$7,713,954.50.

Admiral Cowie. That is explained in this way: I have estimated for 51,500 men in the Navy and 2,600 men in the Marine Corps, which is the number estimated to be afloat, making a total of 54,100 men for 365 days, at \$0.375 per ration, which makes a total of \$7,404,937.50. Then for the officers' commuted rations, 441, midshipmen 900, total 1,341 men at 30 cents per day for 365 days, \$146,839.50. Also, 1,054 general court-martial prisoners, at 25 cents per day for 365 days, \$96,177.50. Subsistence of Nurse Corps, female, about 130, \$26,000.

Then there is a difference between the 50 cents and the 37½ cents on 320,000 sick days in naval hospitals, which is \$40,000 difference.

All this makes a grand total of \$7,713,954.50.

The CHAIRMAN. You stated that you had last year an unexpended balance of \$300,000 and some odd.

Admiral Cowie. Yes, sir; but I do not think it would be wise at all, Mr. Padgett, to reduce the amount asked for. We have figured it too closely to cut it down further, although I feel confident of showing a big reduction this year.

Provisions, Navy-1915-16.

The estimate under this appropriation is made up as follows:

51,500 men in Navy (authorized strength).

2,600 men in Marine Corps (estimate of number afloat).

54,100 men for 365 days, at \$0.375 per ration	\$7,404,937.50
441 officers.	
900 midshipmen at Naval Academy.	
1,341 men entitled to commuted rations, at \$0.30 per day for 365 days.	146,839.50
1,054 general court-martial prisoners, at \$0.25 per day for 365 days...	96,177.50
Subsistence of Nurse Corps (female) (about 130)	26,000.00
Difference between \$0.50 and \$0.375 on 320,000 sick days in naval hospitals	40,009.00

Total 7,713,954.50

The above represents an increase over the 1914 appropriation of \$120,512.75. This increase is principally due to the estimated cost of the ration, which for 1915 is placed at \$0.375. The average cost of the ration has been steadily rising for several years, and it is doubtful that the rise in the cost of provisions has culminated.

For the current year (1914) the average cost was estimated at \$0.37. The average cost for the fiscal year 1913 was \$0.370049.

The above represents the estimates as finally approved by the department. The estimates submitted by the bureau were based on an average cost of \$0.38 per ration, making a total under provisions, Navy, of \$7,811,087; but as a result of instructions from the department to reduce the amount of the bureau's estimates to their present total it was necessary to revise the figures on the basis of an average cost of \$0.375 per ration.

Provisions, Navy—Comparative analysis by subheads.

	Expenditures, 1913.	Appropriated, 1914.	Estimated, 1915.
For provisions for officers, seamen, and marines.....	\$5,612,468.58	\$8,205,935.50	\$8,254,777.00
For commuted rations for officers, seamen, and marines.	771,447.76	800,000.00	800,000.00
For subsistence of men on detached duty.....	276,411.70	300,000.00	300,000.00
For sick in hospital.....	134,075.89	140,000.00	225,000.00
For subsistence of female nurses, Navy and Marine Corps, general court-martial prisoners, U. S. Army emergency rations.....	117,659.40	147,506.25	134,177.50
Total.....	6,912,063.30	7,593,441.75	7,713,954.50

Comparative statements of provisions, Navy.

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Description.	1910	1911	1912	1913	Increase, 1913 over 1912.	Decrease, 1913 under 1912.
Amount appropriated.						
Credits.						
Provisions for Marine Corps and naval hospitals.	87,110,284.31	87,471,070.97	87,430,000.00	88,542,338.26	81,112,838.26	
Salts of provisions for fleet, including ship stores.	130,038.20	186,889.38	133,676.43	221,617.20	87,940.87	
	1,070,618.48	1,373,372.53	1,455,873.68	1,689,486.28	178,771.64	
Total credits.	8,310,941.05	9,031,430.87	9,019,355.10	10,303,385.76	1,374,040.66	
Expenditures:						
Provisions for seamen and marines.	5,981,284.08	6,768,372.87	7,283,001.13	6,973,326.23		8294, 874. 70
Committed rations.	783,191.00	689,192.14	674,877.91	777,447.76	96,460.85	
Subsistence.						
Men on detached duty.	171,466.32	214,736.83	281,391.59	270,411.70		4,979. 90
Sick in hospitals.		128,233.18	87,932.78	134,078.90	37,043.14	
Labor in general storerooms.		602,117.62	686,069.11	707,435.91	16,414.80	
Miscellaneous: Labor, inspection and storage of butter, and cold-storage space.	536,564.70					
At Manila.		7,773.44	5,454.52	22,741.86	17,287.34	
Clothing (account ships' stores).	17,207.64	71,666.13	67,426.84	65,806.82		1,032. 53
Miscellaneous, for maintenance of ice plants and preservation of provisions.						
Material drawn from the naval supply account, coal, lumber, paints, sale and issues to yard departments.	3,513.18	9,200.05	6,204.64	8,838.46	2,633.82	
Issues to ships and miscellaneous.		14,118.76	35,286.22	32,116.46		3,173. 76
For chemists and for clerical, inspection, and messenger service in general store-houses and paymasters' offices of navy yards and naval stations.	413,952.74	424,843.61	442,702.19	484,908.90	42,206.80	
Profits on sales in ships' stores to be turned into the Treasury.	43,512.00	40,262.77	15,976.27	6,932.37		8,146. 90
Outstanding on requisitions and contracts (estimated).	121,223.08	45,813.18	72,188.24	534,181.44	461,943.20	
Total expenditures and obligations.	8,073,887.14	9,006,444.40	9,641,820.40	10,013,220.40	673,998.05	302,598. 86
Balance.	237,053.91	24,986.38	627,465.30	880,175.27		
Total debits.	8,310,941.05	9,031,430.87	9,019,355.10	10,303,385.76		
Deficiency appropriations.		157,000.00	747,092.80			

CHANGE IN NAVY RATION.

It is recommended that sections 1580 and 1581 of the Revised Statutes and the act of March 2, 1907 (34 Stat., 1193), be amended to read as follows:

"The Navy ration shall consist of the following daily allowance of provisions to each person: One pound of biscuit or crackers, or one and one-quarter pounds of fresh bread, or one and one-eighth pounds of flour; one pound of preserved meat, or one and one-quarter pounds of salt or smoked meat, or one and three-quarters pounds of fresh meat, or fresh fish, or eight eggs; three ounces of dried fruit, or six ounces of canned or preserved fruit, or nine ounces of fresh fruit; three gills of dried beans or peas, or eight ounces of rice, cereals, or other starch foods, or twelve ounces of canned vegetables, or one and three quarters pounds of fresh vegetables; together with two ounces of butter, four ounces of sugar, two ounces of coffee or cocoa, or one-half ounce of tea, one ounce of condensed or evaporated milk, or one-sixteenth quart of fresh milk, and a weekly allowance of one-eighth pound of macaroni, one-eighth pound of cheese, one-eighth pound of canned tomatoes, one-half pint of vinegar or oil, one-quarter pint of pickles, one-quarter pint of molasses, one-quarter pound of salt, one-half ounce of pepper, one-eighth ounce of spices, and one-half ounce of dry mustard.

"Seven pounds of lard, or suitable substitute, shall be allowed for every one hundred pounds of flour issued as bread, and such quantities of yeast and flavoring extracts as may be necessary.

"An extra allowance of one ounce of coffee or cocoa, one-half ounce of condensed or evaporated milk or its equivalent, two ounces of sugar, four ounces of hard bread or its equivalent, and four ounces of preserved meat or its equivalent, will be allowed to enlisted men of the engineer and dynamo force who stand night watches between eight o'clock postmeridian and eight o'clock antemeridian, under steam.

"Any article comprised in the Navy ration may be issued in excess of the authorized quantity, provided there be an underissue of the same value in some other article or articles.

"Articles of food made up of combined ration components may be issued, providing there be an underissue of the same value in any of the ration articles.

"In lieu of the daily and weekly allowance as prescribed above the Secretary of the Navy is authorized to fix a daily value for the component of the ration furnished to the crews of vessels not carrying pay officers."

The change in the law is recommended for the following reasons:

(a) Stating the ration components in a more concise way, it permits a more intelligent interpretation of the ration. The law as at present worded is ambiguous and complicated. Misunderstandings as to its intent have frequently arisen.

(b) It allows a ration of fruit (any kind) daily instead of only with dried and canned vegetables, rice, and cereals. A daily issue of fruit is considered necessary from a health standpoint. Life aboard ship is sedentary and bodily functions are prone to become sluggish. Fruits in ample quantities have a great corrective and curative value in this respect in addition to their value as purely food components. The issue of fruit, under the change of law recommended, would also be put on an independent basis, materially simplifying the process not only of issues but of accounting therefor. This feature is an extremely desirable one. This proposed change in the allowance of fruit may have a tendency to slightly increase the average cost of the Navy ration, and to provide for such an increase a reduction has been made in the weekly allowance of macaroni, cheese, and tomatoes, since the allowance of these articles has been found to be more than sufficient. The present allowance is one-fourth of a pound weekly, and the proposed change reduces this to one-eighth of a pound weekly.

(c) It permits an allowance of milk with the extra ration to the engineer and dynamo forces standing night watches.

(d) It eliminates the issue of flour as vegetables, something that is no longer required by conditions afloat.

NAVY RATION LAW.

The following is an extract from the naval appropriation act passed on June 29, 1906:

"Provided, That sections fifteen hundred and eighty and fifteen hundred and eighty-one, Revised Statutes, be amended to read as follows:

"Sec. 1580. The Navy ration shall consist of the following daily allowance of provisions to each person: One pound and a quarter of salt or smoked meat, with three ounces of dried or six ounces of canned or preserved fruit, and three gills of beans or peas, or twelve ounces of flour; or one pound of preserved meat, with three ounces of dried or six ounces of canned or preserved fruit and eight ounces of rice or twelve ounces of canned vegetables, or six ounces of desiccated vegetables; together with one pound of biscuit, two ounces of butter, four ounces of sugar, two ounces of coffee or

cocoa or one-half ounce of tea and one ounce of condensed milk or evaporated cream; and a weekly allowance of one-quarter pound of macaroni, four ounces of cheese, four ounces of tomatoes, one-half pint of vinegar or sauce, one-quarter pint of pickles, one-quarter pint of molasses, four ounces of salt, one-half ounce of pepper, one-eighth ounce of spices, and one-half ounce of dry mustard. Seven pounds of lard or a suitable substitute, shall be allowed for every hundred pounds of flour issued as bread, and such quantities of yeast and flavoring extracts as may be necessary.

"Sec. 1581. The following substitution for the components of the ration may be made when deemed necessary by the senior officer present in command: "For one and one-quarter pounds of salt or smoked meat or one pound of preserved meat, one and three-quarters pounds of fresh meat or fresh fish, or eight eggs; in lieu of the articles usually issued with salt, smoked, or preserved meat, one and three-quarter pounds of fresh vegetables, for one pound of biscuit, one and one-quarter pounds of soft bread or eighteen ounces of flour; for three gills of beans or peas, twelve ounces of flour or eight ounces of rice or other starch food, or twelve ounces of canned vegetables; for one pound of condensed milk or evaporated cream, one quart of fresh milk; for three ounces of dried or six ounces of canned or preserved fruit, nine ounces of fresh fruit; and for twelve ounces of flour or eight ounces of rice or other starch food, or twelve ounces of canned vegetables, three gills of beans or peas; in lieu of the weekly allowance of one-quarter pound of macaroni, four ounces of cheese, one-half pint of vinegar or sauce, one-quarter pint of pickles, one-quarter pint of molasses, and one-eighth ounce of spices, three pounds of sugar, or one and a half pounds of condensed milk, or one pound of coffee, or one and a half pounds of canned fruit, or four pounds of fresh vegetables, or four pounds of flour.

"An extra allowance of one ounce of coffee or cocoa, two ounces of sugar, four ounces of hard bread or its equivalent, and four ounces of preserved meat or its equivalent shall be allowed to enlisted men of the engineer and dynamo force who stand night watches between eight o'clock postmeridian and eight o'clock antemeridian, under steam."

The naval appropriation act passed March 2, 1907, modified this law as follows:

"Any article comprised in the Navy ration may be issued in excess of the authorized quantity, provided there be an underissue of the same value in some other article or articles."

Speaking of the question of rations, I recommended in my annual report that rations be allowed to officers. I would like to say that I believe it is very important that the officers of the Navy be entitled to rations. I have here with me a statement of the different foreign navies, showing what table money they are allowed, and it seems our admirals, and the rest of them aboard ships, where they have to entertain and everything of that kind, should be given some compensation for it. The admirals of the English Navy receive table money to the amount of 1,642 pounds 10 shillings, which is practically \$8,000. He receives almost as much table money as his pay, which is 1,825 pounds, or \$9,000, but they run that in as table pay, making a total of 3,467 pounds 10 shillings, or over \$17,000, and they run from that on down, and the commanders of the fleets at home have only 730 pounds (about \$3,600), but for every other squadron it runs from 1,642 pounds (\$8,000) to 1,095 pounds (nearly \$6,000), and the only squadron that they give 730 pounds (\$3,600) is the fleet in their home waters, and it does seem to me that our officers going to sea should have some additional provision made for them.

Mr. TRIBBLE. While they are at sea?

Admiral COWIE. While they are actually on board ship; yes, sir.

The CHAIRMAN. You mean for entertainment?

Admiral COWIE. I mean entertainment and for running the mess. My idea is to start in and give the commander in chief 7 rations per day, or \$2.10, the admiral of the different squadrons six rations, captains five, commanders four, lieutenant commanders, lieutenants, and

ensigns, three; warrant officers, pay clerks, and mates, two, which would amount to only 60 cents a day for the latter.

Mr. WITHERSPOON. How does the pay of the American rear admirals compare with the pay of the English rear admirals?

Admiral COWIE. The pay and allowance of the English rear admiral is \$10,300, while our senior rear admirals, not taking into consideration the juniors—and the pay should all be the same, by the way—get \$8,000; the first 9 get \$8,000, and the second 9 get only \$6,000. They should all get at least \$8,000 and be paid same as major general in the Army with whom they rank.

The CHAIRMAN. But his allowance would make it more than \$8,000?

Admiral COWIE. He has no allowance at sea whatever; that is what I was speaking of. I want to give all on board ship something for subsistence. They get less at sea than on shore and should get more.

Mr. WITHERSPOON. Do the English rear admirals get quarters furnished for them?

Admiral COWIE. This is entirely at sea. I would have to look that up. I am speaking only of their pay and allowances at sea.

Mr. WITHERSPOON. Have you considered all that our officers get out of the Government, and compare it with all that the English officers get out of their Government, to see which is the greater?

Admiral COWIE. That was compared some time ago, and I think the English officers in the senior grades get a great deal more than our officers—much more. For instance, our rear admirals get an average of \$7,700 at sea, and the English rear admirals get \$10,300, or a little more than that. That is at sea. On shore the officers are really better off than they are at sea. They get less when at sea when they have to keep up two establishments.

Mr. WITHERSPOON. I would like for you to put in the hearing a detailed statement of what our rear admirals get at sea and on shore, and see how much more or less the English officers are paid than ours.

Admiral COWIE. I will be very glad to do it.

Mr. WITHERSPOON. Count it all up and let us see how it stands.

Admiral COWIE. I will be very glad to put it in. I will never go to sea myself again, but feel I should make a plea in justice to those who do.

Pay and allowances of commissioned officers of the United States Navy on shore duty

Officers.	Money value when quarters and allowances are not given in kind.			Total annual pay varying		Total annual pay and allowances varying	
	Quarters.	Heat and light.	Total.	From—	To—	From—	To—
Admiral.....	\$1,500.00		\$1,500.00		\$13,500.00		\$15,000.00
Rear admirals (first 9)...	1,296.00	\$376.32	1,672.32		8,000.00		9,672.32
Rear admirals (second 9)	1,152.00	343.84	1,495.84		6,000.00		7,495.84
Captains.....	1,008.00	311.36	1,319.36	\$4,000.00	5,000.00	\$5,319.36	6,319.36
Commanders.....	864.00	278.88	1,142.88	3,500.00	4,500.00	4,642.88	5,642.88
Lieutenant commanders	720.00	246.40	966.40	3,000.00	4,000.00	3,966.40	4,966.40
Lieutenants.....	576.00	213.92	789.92	2,400.00	3,300.00	3,189.92	4,189.92
Lieutenants (junior grade).....	432.00	173.44	605.44	2,000.00	2,800.00	2,605.44	3,405.44
Ensigns.....	388.00	140.96	528.96		1,700.00		2,128.96

Pay and allowances of commissioned officers of the United States Navy on sea duty.

Officers.	Allowances.	Total annual pay varying	
		From—	To—
Admiral.....	None.....		\$14,850.00
Rear admirals (first 9).....	do.....		8,800.00
Rear admirals (second 9).....	do.....		6,000.00
Captains.....	do.....	\$4,400.00	5,500.00
Commanders.....	do.....	3,850.00	4,950.00
Lieutenant commanders.....	do.....	3,300.00	4,400.00
Lieutenants.....	do.....	2,640.00	3,696.00
Lieutenants (junior grade).....	do.....	2,200.00	3,080.00
Ensigns.....	do.....		1,870.00

Net reduction in income of commissioned officers of the United States Navy on sea duty.

Officers.	Net loss or reduction while on sea duty varying	
	From—	To—
Admirals.....		\$150.00
Rear admirals (first 9).....		872.32
Rear admirals (second 9).....		895.84
Captains.....	\$919.36	819.36
Commanders.....	792.88	692.88
Lieutenant commanders.....	666.40	566.40
Lieutenants.....	549.92	453.92
Lieutenants (junior grade).....	405.44	325.44
Ensigns.....		258.96

NOTE 1.—Allowances on shore duty are fixed for each rank and do not increase for length of service. Pay, however, is increased 10 per cent for each term of 5 years' actual service, and also 10 per cent while on sea duty. Hence the varying figures given in above tables. The table of loss is given as a net loss, since the loss in allowances on sea duty is partially offset by the 10 per cent increase allowed for sea duty.

NOTE 2.—Only one rate of pay is given for ensigns, as they are promoted to lieutenants (junior grade) after 3 years' service, and so receive their first longevity increase in pay as junior lieutenants.

Comparative table of pay and allowances for flag officers of the English and American Navies on sea duty.

	Annual pay.			Allowances.			Total annual pay and allowances.			In American money
English:	£.	s.	d.	£.	s.	d.	£.	s.	d.	
Admiral.....	1,825	0	0	1,642	10	0	3,467	10	0	\$16,874.59
Vice admiral (home fleet).....	1,460	0	0	1,368	15	0	2,828	15	0	13,766.11
Vice admiral (China station).....	1,460	0	0	1,642	10	0	3,102	10	0	15,098.31
Rear admiral (commander in chief, East Indies, commander in chief, Cape of Good Hope).....	1,095	0	0	1,642	10	0	2,737	10	0	13,322.04
Rear admiral (first home battle squadron).....	1,095	0	0	730	0	0	1,825	0	0	8,881.36
Rear admiral (first home battle cruiser squadron).....	1,095	0	0	1,095	0	0	2,190	0	0	10,657.64
Rear admiral (second home battle squadron).....	1,095	0	0	730	0	0	1,825	0	0	8,881.36
Rear admiral (second home battle cruiser squadron).....	1,095	0	0	1,095	0	0	2,190	0	0	10,657.64
Rear admiral (third home battle squadron).....	1,095	0	0	730	0	0	1,825	0	0	8,881.36
Rear admiral (third and fourth home cruiser squadrons and first Mediterranean cruiser squadron).....	1,095	0	0	1,095	0	0	2,190	0	0	10,657.64
American:										
Admiral, annual pay (no allowances at sea).....										\$14,860.00
No vice admirals in American Navy.....										
Rear admiral (first nine).....										8,800.00
Rear admiral (second nine).....										6,600.00
										<hr/>
English admiral.....										16,874.59
American admiral.....										14,860.00
										<hr/>
Difference in favor of English admiral.....										2,014.59
<hr/>										
Average pay of English rear admirals.....										10,377.00
Average pay of American rear admirals.....										7,700.00
										<hr/>
Difference in favor of English rear admirals.....										2,577.00

NOTE.—The lowest total of sea pay and allowances for an English rear admiral is \$81.36 in excess of the highest sea pay of an American rear admiral. The highest total of sea pay and allowances for an English rear admiral is \$4,522.04 in excess of the highest sea pay of an American rear admiral. As shown in the above tables, American naval officers, including even those of flag rank, receive no allowances whatever on sea duty. And the average pay of our rear admirals, who perform the same duties as the English vice admirals, is \$7,700, while the average sea pay of the latter is \$14,432.21, or just about double.

MR. TRIBBLE. Is that a fair comparison, since their expense of living in this country is more than that in England?

ADMIRAL COWIE. Decidedly more. I would like to say that I was instrumental here, some years ago, in getting through a bill to increase the pay of officers in the Army, the Navy, and the Marine Corps. I prepared and used arguments on the increased cost of living and got them before the Military Committee and some of the others, and Congress in that year increased their pay practically on the argument I brought out, or a lot of them, from \$5,000 to \$7,500. The next year it did increase the pay of the Army and Navy, but I wanted a 20 per cent increase for all, which I thought was fair. That is what we started out on, but we wound up by giving the lower grade, which were well taken care of, about 33 per cent, but when we got up to the rear admiral's they got only a little over 7 per cent while the Admiral of the Navy got no increase whatever.

MR. WITHERSPOON. The Congressmen really voted by an overwhelming majority that our pay ought not to be increased, and we just increased it because the Senate forced us to do it. [Laughter.]

ADMIRAL COWIE. So I understand. I could not find anyone after that bill passed who voted for it. [Laughter.]

It really is a shame these officers while on shore are pretty well taken care of, because they have quarters, but when they go to sea it is necessary to keep up two establishments and they really get a great deal less at sea than while on shore.

The CHAIRMAN. They nominally get 10 per cent more.

Admiral COWIE. They nominally get 10 per cent more—I had forgotten that—added to their pay, but that does not come up to as much as the quarters on shore, which have to be kept up while they are at sea, and their extra expenses on shipboard also.

Mr. TRIBBLE. If they have a wife and family at home, they have to keep up two establishments?

Admiral COWIE. Exactly; and they must entertain. Some people say they do not have to do it. Some people seem to think their uniforms and foods are furnished. Absolutely nothing is furnished them at sea, and they are under these expenses for entertaining foreigners and everything like that, which they do in good style, even if they do not have a cent left at the end of the month. I have been where the midshipmen were held up for a month's pay outright for entertaining.

Mr. WITHERSPOON. They also entertain the Naval Affairs Committee when they go on board ship.

Admiral COWIE. We always entertain all our friends aboard ships.

Mr. ROBERTS. As a matter of fact, the department for some time has recognized this burden of entertainment placed on officers, and the Secretary has from time to time, I am informed, made some little allowance out of his contingent fund for those entertaining costs.

Admiral COWIE. Yes, sir. I was over in Europe one time when we were entertained by the Germans. We were guests of the nation, and they entertained us royally for a week, and I think we had an entertainment allowance made us of about \$1,000.

Mr. ROBERTS. For returning these entertainments?

Admiral COWIE. For returning those entertainments. You can imagine what the officers had to pay out of their own pockets in order to do it properly. It is certainly not right, and officers should be given an allowance for table money and entertaining, for it must be done.

Mr. ROBERTS. I agree with you wholly on that.

Admiral COWIE. I will never go to sea again, and therefore I am speaking for the other officers, all of whom have my sympathy.

Mr. ROBERTS. On that proposition, the senior rear admiral that would be the fleet commander would get seven rations?

Admiral COWIE. Yes, sir.

Mr. ROBERTS. That is \$2.10?

Admiral COWIE. \$2.10.

Mr. ROBERTS. That would amount to a little over \$700 a year. That is not enough.

Admiral COWIE. I admit I have been pretty low on these estimates, but I made the amount small hoping to have favorable action by the committee.

Mr. ROBERTS. It would help, but it is not enough.

Admiral COWIE. It would all help, of course, and I have made it very reasonable and hope that the committee will take favorable action on it.

Admiral Dewey told me only the other day—of course he will not go to sea any more—that he was entertained royally by some of the English at Manila and that it cost him three or four months' pay to return the hospitality shown him.

Mr. ROBERTS. They must return that hospitality or else it puts the American people in a false light.

Admiral COWIE. You all know the American officers would return these hospitalities if they never had a cent left to call their own.

Mr. STEPHENS. You are asking these allowances for other officers?

Admiral COWIE. At sea, on board ship.

Mr. STEPHENS. For officers of the Marine Corps, too?

Admiral COWIE. I have not mentioned the Marine Corps, but they come in with the other officers.

Mr. STEPHENS. And include all the officers?

Admiral COWIE. In my annual report I say "all officers," such and such a rank, etc.

Mr. STEPHENS. When you take up the collection among the officers, in whatever way you do it, for entertaining visitors on board ship, you include the Marine Corps officers?

Admiral COWIE. Yes, sir; and the Marine Corps officers were included in this recommendation. I have said "all officers" of such and such rank, no matter whether of the line, staff, or Marine Corps. It would cost the Government, as I have figured, roughly about \$621,000 per annum. I hope it will be provided under "Provisions, Navy."

The CHAIRMAN. The next item is "Maintenance, Bureau of Supplies and Accounts." I notice new language:

And reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat-food products for the Navy Department.

Admiral COWIE. The Department of Agriculture has been sending their inspectors and loaning them to the Navy Department for the purpose of inspecting these meat-food products, and have rendered very valuable service, because this has prevented putting on board ships or being delivered to the Navy in any shape products that were not up in every way to the requirements. The Department of Agriculture, however, states that they are unable to keep up this extra expense, and for that reason they ask for about \$20,000. We estimated that would be necessary to reimburse them for the service of these people, who are practically giving their service to the Navy, and for that reason we have inserted that item.

Mr. ROBERTS. If we do not get the Department of Agriculture experts to inspect the Navy meats, we would have to employ men for the Navy Department especially, would we not?

Admiral COWIE. We certainly should, but the Department of Agriculture people are up in these matters, and they are the people we ought to have by all means.

The CHAIRMAN. This is not the pay of the men themselves, but it is to reimburse the department for its expenditures?

Admiral COWIE. Exactly.

The CHAIRMAN. So that what the Department of Agriculture would get from the Navy Department would pay back to the Department of Agriculture and would not be an additional amount paid to the men?

Admiral COWIE. No.

Mr. WITHERSPOON. Has it not been a fact that up to this time the appropriations for the Agricultural Department have been sufficient to enable them to do that? Is not that so?

Admiral COWIE. That is true, but we have been asking them for more men continually, trying to spread it out. We first established an inspection at New York, then we got one at Philadelphia, and finally we have got them started in on the west coast, and we are trying to extend it so as to have these inspectors at all the different places where the food products are delivered to the Navy.

Mr. WITHERSPOON. Are you not assuming that in the appropriation bills for the Agricultural Department that they will not include enough to enable the Agricultural Department to continue this service as you require it?

Admiral COWIE. Yes, sir; I am, and I think the Department of Agriculture has made a statement practically to that effect, that they could not continue this duty unless they were reimbursed, because it practically takes the men away from their department.

Mr. WITHERSPOON. I understand, but the point I want to get at is this: If the Agricultural Department in presenting its estimates gets an appropriation sufficient to enable them to do this work, then if we give it to you, too, it will be a double appropriation for it?

Admiral COWIE. Yes; but I understand from the Department of Agriculture—that is my impression—that they do not want to increase their appropriation, but they do want us to pay for the services that we get.

Mr. WITHERSPOON. They not only ought not to increase it, but if they are going to be relieved from doing the work they have been doing with their appropriations, they ought to decrease their appropriation.

Admiral COWIE. Of course, that is a matter for the Department of Agriculture.

Mr. WITHERSPOON. How can we act intelligently about this unless we know what their appropriation is going to be? If they are asking for the same appropriation that they have been asking for, which has been sufficient to enable them to do this work, and then we make it, too, there will be a double appropriation.

Admiral COWIE. Exactly, but they require more men to do work for the Navy.

Mr. ROBERTS. Examine that little item on this inspection business with the Department of Agriculture, and I think I can see considerable justice in the attitude taken by the department in this particular case. I know the inspectors employed in the Department of Agriculture have been asking for an increase of pay, and I am informed by the inspectors, and it is not denied by the heads of the bureau in that department, that these men were substantially promised certain increases after they came in the service, after they had demonstrated their ability and been there a certain length of time, the idea was held out and almost promised that they would receive increased pay. The department has not been able to give them these increases, which has made great dissatisfaction. Here is possibly one reason: They have been using their money to do work that was not contemplated when the appropriations were made, and which in one sense is

outside of the scope of their inspection duties, and that has eaten up the money which they ought to give to the employees for increases in pay. They are not compelled by law to pay these inspectors and inspect for the Army, the Navy, or any other branch of the Government. Their duties really contemplate the inspection of food for general use of the people and not any specific department of the Government, and they have volunteered, as I understand it, to do this inspection. They find it is eating into their capital, so to speak, and the men are finding also that they are doing extra work, doing more hours of work per day than they claim they should be doing, and they are not getting the increase that they say was held out to them and which they hoped would be granted.

Admiral COWIE. This estimate is put in at the request of the Department of Agriculture, which has stated it is not able to stand the expense from its own appropriations. It is not only what they have been standing, but I want more. I want to spread this thing out and have inspections by these inspectors of the Department of Agriculture at almost every place where there is any provisions delivered for the Navy.

Mr. ESTOPINAL. Do they have to employ extra inspectors to do this additional work or has the work all been done by regular inspectors of the department?

Admiral COWIE. That I am unable to state.

Mr. ESTOPINAL. If it increases their force, there ought to be provision made for it.

Admiral COWIE. I should think it would increase their force, because I know on the Pacific coast, where we tried to get a man, it was some time before they could arrange to give us anybody.

Mr. ROBERTS. It does not increase their force, but increases beyond reasonable hours the labor in the force; in other words, they are spread out over greater territory, the men have to work longer hours than is a fair day's work.

Mr. WITHERSPOON. I understood you to say a while ago that the effect of this would be to enable them to increase the pay of their men?

Mr. ROBERTS. It ought to be.

Mr. WITHERSPOON. Well, didn't you say that it would be?

Mr. ROBERTS. I think that would be one result of it.

Admiral COWIE. I do not think that is the object, but it is to provide enough men so that they can go on with this extra duty for the Navy. As I say, when they started in, they started with a force in New York, and then we got an additional one at Philadelphia, and I want the work extended.

Mr. WITHERSPOON. You have not the idea, then, that Mr. Roberts expressed, that the object of this thing is to enable the Department of Agriculture to increase the pay of their men?

Admiral COWIE. No, sir; I have not. I have an idea that it is due to the fact that they want additional men, additional force at those places. They can not give me all that I want now unless they can be reimbursed for the expenditures.

The CHAIRMAN. In making your estimates, how much do you include for that item?

Admiral COWIE. Twenty thousand dollars.

Mr. WITHERSPOON. Could you not find out from the Agricultural Department how much heretofore they have been asking on account of the men that they have devoted to this work in the Navy Department and put that in your hearings?

Admiral COWIE. Yes, sir; this estimate of \$20,000 in fact is put in on the recommendation of the Department of Agriculture. I think there is a letter in my bureau to that effect. I did not bring that down with me, but I will be glad to furnish it to you.

The **CHAIRMAN.** Insert it in the record.

Admiral COWIE. Yes.

DEPARTMENT OF AGRICULTURE,
Washington, D. C., April 19, 1913.

The honorable the **SECRETARY OF THE NAVY.**

Sir: I have the honor to acknowledge the receipt of your letter of the 9th instant, and, in accordance with the request contained therein, the Bureau of Animal Industry of this department will arrange to detail an inspector to the navy yard, Puget Sound, Wash., to pass upon meat and meat-food products prepared for the Navy to determine whether they comply with the naval specifications. The department considers it advisable at this time to suggest that as early as practicable the Navy Department arrange to take over the meat inspectors engaged in this class of work in order that this department may be relieved of the expense connected therewith.

I have the honor to be, sir,

B. T. GALLOWAY,
Acting Secretary.

[First indorsement.]

NAVY DEPARTMENT, April 25, 1913.

Forwarded to Bureau of Supplies and Accounts for its information and comment and recommendation.

F. S. CURTIS, *Chief Clerk.*

[Second indorsement.]

BUREAU OF SUPPLIES AND ACCOUNTS,
Washington, D. C., April 29, 1913.

To: The Navy Department.

Subject: Inspection of meats and meat food products by a representative of the Department of Agriculture stationed at the navy yard, Puget Sound, Wash. Reimbursement of the department for services of meat inspectors.

1. The bureau has issued the necessary instructions to the navy yard, Puget Sound, Wash., relative to providing proper facilities for the meat inspector, and will provide in all contracts for meats and meat food products, commencing with July 1, 1913, that all deliveries must be presented to this inspector for inspection prior to final delivery. The bureau is informed by the Bureau of Animal Industry that the inspector will report for duty July 1, 1913.

2. In the opinion of this bureau it would not be advisable for the Navy Department to take over the meat inspectors engaged in the inspection of meats and meat food products for the Navy. These inspectors should remain under the control of and represent the Bureau of Animal Industry, as by this method a disinterested inspection is assured and the department secures the assistance of a well-organized bureau of the Department of Agriculture, specially trained in the technical questions of meat inspection, which is able, through its organization, to follow the preparation and handling of meats and meat food products for the Navy from the packing houses to final delivery, and to separate the inspectors now engaged in inspecting meats and meat food products for the Navy would greatly reduce the efficiency of the service now being secured and which has proved such an unqualified success at the navy yards, Boston, New York, and Philadelphia.

3. The bureau considers that the Department of Agriculture should be reimbursed for the expense of making these special inspections for the Navy, as the services of the inspector are practically confined to Navy work. It is understood that these inspectors are paid from an appropriation for meat inspection of \$3,000,000, provided by the act of June 30, 1906, and it is thought that reimbursement to this appropriation could be made from the appropriation "Maintenance, Bureau of Supplies and Accounts,"

if funds were made available under this appropriation. Under the appropriation for 1914 the limitation of \$520,000 for clerical, inspection, and messenger service, etc., will not permit of this additional expense, which would probably amount to about \$1,500 a year for each inspector stationed at navy yards and probably a smaller amount for inspectors engaged for a portion of their time on Navy inspection. The Bureau of Animal Industry informs this bureau that its estimate of the annual expense on the service now rendered is about \$10,000, and that if the inspection service was extended to include the principal navy yards and stations the total expense would not exceed \$20,000.

4. In view of the great importance of this inspection service to the Navy, the bureau recommends that Congress be requested to furnish the necessary funds for its continuance.

T. J. COWIE,
Paymaster General, United States Navy.

NAVY DEPARTMENT,
Washington, D. C., May 6, 1913.

SIR: I have the honor to acknowledge the receipt of your letter of April 19, 1913, in which you suggest that the Navy Department arrange, as early as practicable, to take over the meat inspectors which you have detailed from time to time in pursuance of requests of this department to make inspections of meats and meat food products for the naval service, in order that your department may be relieved of the expense connected therewith.

I am thoroughly in accord with your views that your department should not be burdened with the expense of these services, the magnitude of which the department had not previously realized, and while the appropriations of this department for the present and the ensuing fiscal year are only barely sufficient to meet expenditures, the department will be only too glad to include in its estimates for the fiscal year 1915 a provision looking to the defrayment of the expenses of such inspectors out of naval funds.

The department respectfully submits that it would not be advisable for it to take over the meat inspectors engaged in the inspection of meats and meat food products for the Navy, believing that these inspectors should remain under the control of and represent the Bureau of Animal Industry, as by this method a disinterested inspection is assured and the department secures the assistance of a well-organized bureau of the Department of Agriculture, specially trained in the technical questions of meat inspection, which is able, through its organization, to follow the preparation and handling of meats and meat food products for the Navy from the packing houses to final delivery, and to separate the inspectors now engaged in inspecting meats and meat food products for the Navy would, in the department's opinion, greatly reduce the efficiency of the service now being secured and which has proved such an unqualified success at the navy yards at Boston, New York, and Philadelphia.

It is understood that the annual expense of the service now rendered is about \$10,000, and that, if the inspection service were extended to include the principal navy yards and naval stations, the total expense would not exceed \$20,000. The department is disposed to so extend it in view of the excellent results thus far obtained and will ask for the larger amount, provided your approval is given.

A further expression from you in the premises would be greatly appreciated.

Respectfully, yours,

F. D. ROOSEVELT,
Acting Secretary of the Navy.

The honorable the SECRETARY OF AGRICULTURE.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D. C., May 16, 1913.

The honorable the SECRETARY OF THE NAVY.

SIR: I have the honor to acknowledge the receipt of a letter of May 6 from the Acting Secretary of the Navy and desire to express appreciation of the favorable comment concerning the inspection by employees of the Bureau of Animal Industry of this department of meat and meat food products delivered to the Navy.

The department is in accord with the suggestion that the Navy Department include in its estimates for the fiscal year 1915 a provision for the salaries and expenses of

employees of this department while engaged in inspections for the Navy, to be paid from the naval funds. Under such a provision it is believed the inspection could be extended to other navy yards and stations as required.

I have the honor to be, sir, your obedient servant,

B. T. GALLOWAY, *Acting Secretary.*

[Indorsement.]

NAVY DEPARTMENT, May 21, 1913.

To: Bureau of Supplies and Accounts.

Subject: Services of meat inspectors, Department of Agriculture.

References:

(a) Letter of Department of Agriculture, 4/19/13.

(b) Bureau's second indorsement, No. 320-3/451-16, 4-29-13.

In pursuance of the bureau's indorsement, reference B, the department under date of the 6th instant, informed the Department of Agriculture that, with its approval, provision would be included in the estimates for 1915 looking to the defrayment out of naval funds of the expenses of meat inspectors engaged in inspecting meat and meat food products for the Navy, the inspectors to remain under the control and represent the Bureau of Animal Industry.

That department, in a letter dated the 16th instant, having signified its concurrence in the proposition, the bureau will include in its estimates for 1915 an estimate of \$20,000 to meet the expenses of such inspections, which amount, it is understood, will permit of the extension of the service to include the principal navy yards and naval stations.

F. D. ROOSEVELT, *Acting Secretary.*

Mr. WITHERSPOON. I would like to know if they are going to ask for that same \$20,000 in the appropriation bill for the Agricultural Department. If they are not, I think it is entirely proper that you should have it.

Admiral COWIE. I think they will not reduce their amounts, because, as I say, they have not sufficient men now to give me the number required for the Navy. They have been very kind about it and extended every courtesy they possibly could and have been a great benefit to the Navy, and especially the enlisted men, because these provisions are used by them.

Mr. WITHERSPOON. This whole work under the pure-food law is expanding right along?

Admiral COWIE. Yes, sir; and I am trying to have it so all provisions will be inspected wherever delivered.

Mr. ESTOPINAL. The Department of Agriculture will have to increase its force in order to supply you with the number of inspectors that you want?

Admiral COWIE. That is the whole thing in a nutshell.

Mr. ROBERTS. As a matter of fact, the Department of Agriculture ought to carry considerable increase in their appropriation for inspection in order to adequately compensate the men they have already got. I have some idea, since there are a lot of inspectors in my district.

Admiral COWIE. They have done everything they could, with the appropriations available, and I greatly appreciate the work that has been done for the Navy and hope this item will stand. It is in the interest of the enlisted men.

The CHAIRMAN. The next change you have is that you have inserted the words "and accounting offices"?

Admiral COWIE. That is just simply to provide for what is now done; they are really paid from this appropriation, and it should have been in the law before.

The CHAIRMAN. It is just to make clear what you have been doing all the years?

Admiral COWIE. Exactly.

The CHAIRMAN. The next is freight, Bureau of Supplies and Accounts, which you are increasing \$100,000?

Admiral COWIE. Yes, sir.

Mr. ROBERTS. Before you get away from that, there is an increase in that item of clerical, inspection, and messenger service, and so on, of \$78,000. Will the Admiral explain why that is necessary?

Admiral COWIE. Yes, sir.

The CHAIRMAN. It is \$520,000 at the bottom.

Admiral COWIE. I have these items, also the maintenance, \$100,000; books and blanks, \$30,000; and purchase, repair, and exchange of typewriters for ships, \$15,000; the removal and transportation of ashes from ships of war—that is, where equipment is put in. I have that prepared in case equipment is abolished. I have it prepared both ways.

The CHAIRMAN. Will you put both in you hearings?

Admiral COWIE. Yes, sir.

Maintenance, Supplies and Accounts—Comparative analysis by subheads.

Subhead.	Expenditures, 1913.	Appropriated, 1914.	Estimates, 1915.
For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards.....	\$123,049.45	\$100,000.00	\$100,000.00
For coffee mills and repairs thereto.....	295.78	300.00	300.00
For expenses of naval clothing factory and machinery for same.....	59,148.53	50,000.00	61,487.25
For modernizing laboratory equipment and bringing same up to date.....	3,133.47	2,700.00	2,700.00
For tolls, ferrages, yeomen's stores, safes, newspapers, and other incidental expenses.....	65,148.57	47,000.00	47,000.00
For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under general account of advances.....	1,187,392.90	1,270,000.00	1,418,000.00
Meat inspection.....			20,000.00
Total.....	1,438,168.69	1,470,000.00	1,649,487.25

Maintenance, Supplies and Accounts, 1915.

The items and amounts making up the estimate under this appropriation are as follows:

Labor in general storehouses.....	\$820,000.00
Clerical force in general storehouses.....	598,000.00
Total for labor.....	1,418,000.00
Payment of meat inspectors, Department of Agriculture.....	20,000.00
Supplies and incidentals (formerly contingent Supplies and Accounts).....	211,487.25
	1,649,487.25

The estimate under this appropriation has been increased \$198,000 over the 1914 appropriation.

The increase by items is as follows:

Labor in general storehouses, etc.....	\$70,000.00
Clerical force.....	78,000.00
Meat inspectors, Department of Agriculture.....	20,000.00
Supplies and incidentals.....	11,487.25

179,487.25

Special attention is invited to the item of \$20,000 for reimbursing the Department of Agriculture for the cost of inspection of meat and meat food products for the Navy. This estimate is submitted at the request of the Department of Agriculture, which has stated that it is not able to stand the expense from its own appropriations any longer. This work has been of inestimable benefit to the Navy Department in enabling it to procure a high grade of food for the enlisted men; and it is imperative that provision be made for the continuation of the inspection work and its extension.

Maintenance—How to be expended.

For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards.....	\$100,000.00
For coffee mills and repairs thereto.....	300.00
For expenses of naval clothing factory and machinery for same.....	61,487.25
For modernizing laboratory equipment and bringing same up to date..	2,700.00
For tolls, ferriages, yeoman stores, safes, newspapers, and other incidental expenses.....	47,000.00
For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under general account of advances: <i>Provided</i> , That the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$598,000.....	1,418,000.00
For reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat-food products for the Navy Department.....	20,000.00
In all, for maintenance.....	1,649,487.25

Maintenance (if Bureau of Equipment is abolished).

NOTE.—In the event of the abolishment of the Bureau of Equipment, the above estimate for maintenance under the Bureau of Supplies and Accounts should be increased to a total of \$2,033,887.25, and the following substituted for the text of the subhead for maintenance, viz:

For fuel, books and blanks, stationery, interior fittings for general storehouses, pay offices, and accounting offices in navy yards.....	\$100,000.00
For stationery for commanding and navigating officers of ships, for chaplains on shore and afloat, and for the use of courts-martial on board ship.....	30,000.00
For purchase, repair, and exchange of typewriters for ships.....	15,000.00
For removal and transportation of ashes from ships of war.....	12,500.00
For packing boxes and materials.....	2,400.00
For coffee mills and repairs thereto.....	300.00
For expenses of naval clothing factories and machinery for the same..	61,487.25
For modernizing laboratory equipment and bringing the same up to date.....	2,700.00
For the purchase of articles of equipage at home and abroad under the cognizance of the Bureau of Supplies and Accounts, and for the payment of labor in equipping vessels therewith, and for the manufacture of such articles in the several navy yards.....	90,000.00
For musical instruments and music.....	18,000.00
For mess outfits.....	100,000.00
For soap, cleaning gear, on board naval vessels.....	44,000.00
For athletic outfits.....	27,500.00
For tolls, ferriages, yeomen's stores, safes, newspapers, and other incidental expenses.....	47,000.00

For labor in general storehouses, paymasters' offices, and accounting offices in navy yards and naval stations, including naval stations maintained in island possessions under the control of the United States, and expenses in handling stores purchased and manufactured under "General account of advances": <i>Provided</i> , That the sum to be paid out of this appropriation, under the direction of the Secretary of the Navy, for chemists and for clerical, inspection, and messenger service in the general storehouses, paymasters' offices, and accounting offices of the navy yards and naval stations for the fiscal year ending June 30, 1915, shall not exceed \$643,000.....	\$1,463,000.00
And for reimbursement to appropriations of the Department of Agriculture of cost of inspection of meats and meat food products for the Navy Department.....	20,000.00

In all, for maintenance and equipment under the Bureau of Supplies and Accounts.....	2,033,887.25
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I have asked for an increase in labor of \$70,000 in general storehouses among others. We are right up against it in this appropriation and it is hard work to make ends meet, and the clerical force is \$78,000, which is required for additional people. This \$20,000 for the Department of Agriculture, which we have just explained, and \$11,487.25 for supplies and incidentals, which come in under that one provision. All of these different items I have mentioned in this revised list, which brings it up to this total amount of \$1,649,487.25.

I want to say to the committee that I, in my original estimates, had an increase over these amounts, but in talking it over with the Secretary we cut it right down to rock bottom, and made everything as low as possible. I fear we may run short on these things, and I think I should explain to the committee that there may be some deficiency this next year, but at the same time we are going to try to make out with what has been asked for and cut down expenses in every way possible.

The CHAIRMAN. What is clerical?

Admiral COWIE. Clerical force. I want an increase. We have not people sufficient to do the work, and I feel that the Government is losing thousands of dollars a year simply by not having the people who can be on hand to do necessary work. As I explained to the Secretary, in regard to officers, if we had more officers we could save ten times their salary. We should have them in every position on shore, especially in the Pay Department, to take care of stores and prevent increases in articles which we have already on hand. An adequate force would save the Government the salaries over and over again. I can see where I could reach out and save money, but I have not the people to do what I know will effect economies. The shortage in the Pay Corps is great and we must have relief before long. Only yesterday we tried our best to get an officer to take the place of one court-martialed on the Pacific station, and finally we had to take a man who had just returned from sea and who had been home only a few weeks and send him out. I think it is false economy to cut down on force where you can utilize people to handle and supervise work which it is evident will result in economies greatly in excess of their pay.

The naval supply account for the Navy I have reduced this last year by over \$700,000, and that is a big saving. It reduces the capital stock we are working on, and what I am trying to do now in the navy yards is to reduce the quantity of stores we are carrying

very much more, for I am satisfied the stock can be reduced at least a million dollars more without detriment to the service, and good business requires such action.

The CHAIRMAN. How much have you in store now, of all kinds?

Admiral COWIE. Stores of all kinds on board ship and on shore was, on June 30, 1913, over \$170,000,000—this, of course, includes ordnance.

Mr. TRIBBLE. Could not a great many of these positions you refer to there, looking after stores and things of that kind, be filled by officers not in line of active duty?

Admiral COWIE. Yes.

Mr. TRIBBLE. These men are being retired by the plucking board, who are capable and efficient men, and could they not fill those positions?

Admiral COWIE. I have only two or three such pay officers on the retired list. We have not had any plucking board for paymasters.

Mr. TRIBBLE. I mean those who have retired and have been taken from the line of promotion, and will be taken in the future—efficient and capable as they are—could not they fill these positions if they were removed by the plucking board from the line of promotion and placed in these subordinate positions?

Admiral COWIE. Certainly.

Mr. ROBERTS. Shifting a line officer to a staff rank duty.

Admiral COWIE. The only pay officers I have available on the retired list is one out on the west coast, and I had a letter written a couple of weeks ago to him. Of course, we can not put him on duty unless he wants to go on. There is that one officer, and there is another one in Washington, whom I tried to reach, to see if I could not get him to go on duty. The pay corps is very different from the line. Officers of the line are not assigned to pay corps duty—staff officer's duty.

Mr. ROBERTS. The men Mr. Tribble is speaking of being put in charge of these stores in the yards and the stations, would not be very high rank, if they were staff or commissioned officers?

Admiral COWIE. They would not be very high rank?

Mr. ROBERTS. Assistant storekeeper, etc.

Admiral COWIE. They would come in under the general storekeeper.

Mr. ROBERTS. You could not, as a matter of administration, take, for instance, the retired pay officer of high rank and assign him to duties of a much lower rank?

Admiral COWIE. Oh, no; of course not.

Mr. TRIBBLE. I am considering that he is taken out of the line of promotion. You have put him in private life. I am not putting any in private life by my way of doing it; I am putting him in the service and giving him something to do and rendering the country service, and giving him employment and giving him a salary. I am asking you if they could not fill those positions?

Admiral COWIE. I think some of them could fill the positions. Not only that, so far as the plucking board goes, I would not have any plucking. I believe every officer should do his duty, and I think the officers who are taken out in that way should be available for duty.

Mr. ROBERTS. Admiral, that opens up an interesting line of thought. You, of course, believe in some way of weeding out the incompetent

and the inefficient and the unqualified among the naval officers, do you not? In other words, because a man has got his foot on the lowest round of the ladder, you do not believe in allowing him to go to the top of that ladder whether qualified or not? You believe in some way in getting rid, at some stage of his career, of the inefficient officer. Of course, the law at present provides that that shall be done through the plucking board, who reach a certain way down the ladder and to officers of certain rank. My thought has been always that we ought to start clear at the bottom of that ladder and throw out, for instance, the ensign, if he does not show ability to go ahead to lieutenant, junior. And, for instance, take a lieutenant (junior grade), after he serves in that grade for a time and comes to the period for promotion, and he has not shown himself qualified or is unfit for any reason whatever, drop him then and there; but the practice has been, while we have had general rules of promotion, yet I think it is a fair statement to make, that those boards have not done their full duty in the past.

They have not been careful enough about looking into the qualifications and the all-around capacity of the man to go into the next grade, with the result that we get men up to lieutenant commander who never should have reached that grade and then all at once they are dropped, and the method provided for doing it has been the plucking board. There ought to be, to my way of thinking, some other means of looking into all the grades and stopping them just as soon as it is developed that they are in any way physically, mentally, or temporarily unfit to go ahead they ought to remain in the grade they are in.

Admiral COWIE. While I did not intend to go into this personnel bill here at this time——

The CHAIRMAN. We do not want to go into it. I just wanted to ask the simple question.

Mr. TRIBBLE. Pardon me, if we went into it.

The CHAIRMAN. That is all right. How would you get promotion if you did not have some elimination?

Admiral COWIE. I would have promotion, as I stated in a memorandum that I sent to the committee, by classes each year. I have worked that up in my proposed bill and I have shown how this could be done; that we could provide for the vice admirals we require—advance the necessary numbers to the higher grades and prevent humps—by making these promotions by classes instead of individuals. Promote by classes each year, and all officers that were not fit to be promoted in the service, dropped out, but those who are, let them be promoted and go on. This can be done with practically no additional expense with the present number of officers, but to provide the necessary number of officers the midshipmen at the academy should be doubled for a number of years.

Mr. WITHERSPOON. I would like to ask you this question: I understood whenever any officer, from ensign up, comes to be promoted he has to be examined, does he not, by a board?

Admiral COWIE. Certainly.

Mr. WITHERSPOON. To see whether he is competent to be promoted. If he is incompetent he is retired, and put on the retired list, is he not?

Admiral COWIE. No, sir.

The CHAIRMAN. He is put on at half pay?

Admiral COWIE. He can be wholly retired. If an officer be found not competent morally or professionally to be promoted, he can be wholly retired on one year's pay. For physical disability he would be retired on three-quarter pay.

Mr. WITHERSPOON. Here is what I want to ask you: In that case if that man was competent to fill these places for which you say you need more men, would you favor a provision in the law that would assign him such duties as he could perform, rather than to put him on the retired list, with pay for doing nothing? Would you favor such a law as that?

Admiral COWIE. If an officer comes up for promotion and is incompetent to be promoted, I certainly would not want him in my department at any price.

Mr. WITHERSPOON. You do not concede, then, that a man could be incompetent to be promoted to a higher rank and still be competent to perform other duties in a different position?

Admiral COWIE. No; I do not. I think that any officer in the service who has gone through a grade and is not competent to be promoted professionally ought not to be in the service.

Mr. TRIBBLE. In other words, if a man is not competent of being a Congressman he is not competent to be a secretary of a Congressman?

Admiral COWIE. I do not quite understand that.

Mr. TRIBBLE. I am trying to carry out the point of Judge Witherspoon, that if a man is incapable of filling one position he is capable of filling some other, and there is not any use to dismiss him because he is not capable of being promoted.

Mr. WITHERSPOON. To make my inquiry more specific, take an officer, and suppose he is examined and the board decides that he is not competent to be promoted to the position of lieutenant (junior grade). Do you say that that would prove that that man would not be competent to come into your office and perform these clerical duties for you for which you need more men to perform?

The CHAIRMAN. That would depend, would it not, upon the grounds upon which they base their retirements?

Mr. WITHERSPOON. Of course it might be that he had consumption.

Admiral COWIE. If the man were retired for physical disability, there is no reason why I should not have him. I would be glad to have him. There are a good many midshipmen down at the Naval Academy who are simply a little color blind, which would affect their status as line officers but not as pay officers.

Mr. WITHERSPOON. There were a number in the last class, I understand.

Admiral COWIE. I would be glad to have them all in the Pay Corps. Young men down there have been turned down for a little deafness, and some of them we have gotten in the Pay Corps. I am glad to have them there.

Mr. TRIBBLE. You understand my position?

Mr. ROBERTS. The Admiral's objection is of the man's professional qualifications.

Admiral COWIE. As a rule if a man is turned down professionally and is not fit to be promoted, he is not good for anything. I believe they should all so apply themselves that they would qualify for promotion.

Mr. WITHERSPOON. If a man was turned down for dishonesty, he ought not to be anywhere.

Mr. ROBERTS. Nor for drunkenness.

Mr. WITHERSPOON. That is another.

The CHAIRMAN. Or lack of application?

Admiral COWIE. Lack of application, that is what I mean—a man who does not apply himself sufficiently to pass when he comes up for promotion ought not to pass, and such men would not as a rule make good in other positions.

Mr. WITHERSPOON. If they are competent to perform their duties they ought to be required to perform them rather than to spend their lives in idleness and live out of the Treasury.

Mr. ROBERTS. We passed a law a year or two ago about these active officers keeping employed, and we cut them down materially in pay, did we not?

The CHAIRMAN. To lieutenants; yes.

Mr. ROBERTS. I had some doubt in my mind about the wisdom of that law, if we want to get retired officers doing active duty, because in many instances the pay of retired officers might be more than his pay as lieutenant, senior grade, and it would be no inducement for him to give up his retired pay in order to get into active service.

Mr. WITHERSPOON. It would not be a question of inducement; we could make the law provide for that.

The CHAIRMAN. He would not have to give up his retired pay as we could provide he should have it as retired pay, unless it was less than the pay of a lieutenant.

Admiral COWIE. Pay and allowances of a lieutenant. In case their retired pay exceeds that, they draw the retired pay.

The CHAIRMAN. Pay and allowances of a lieutenant.

Mr. ROBERTS. I understood it threw him back.

The CHAIRMAN. No; it does not.

Admiral COWIE. No; if he should go on duty, an officer of the rank of commander, he would receive his retired pay as commander or in lieu thereof the active pay and allowances of a lieutenant, which exceed his retired pay as commander.

Mr. ROBERTS. The active pay of lieutenant would hardly be that of retired pay for commander, would it?

Admiral COWIE. The lieutenant's pay and allowances amount to a little more than the retired pay of a commander.

The CHAIRMAN. It reaches up to captain.

Mr. ROBERTS. You take a captain, it would be the other way.

Admiral COWIE. A captain would simply get retired pay as captain. I think if the officers are assigned to active duty they should receive the pay and allowances of the grade they are in.

Mr. ROBERTS. That is a thing that always struck me; if you are going to put an officer in the active service, why should you make him work for his retired pay, when men who are not retired should get pay for the same work?

Mr. STEPHENS. Admiral, what has been the experience of the Navy Department with retired officers returned to duty at any less rank than they previously occupied?

Admiral COWIE. They would not have less rank.

Mr. STEPHENS. The duty—I particularly referred to the experience in the department with regard to duty, how they performed it.

Admiral COWIE. As far as I know, very well.

Mr. ROBERTS. Has there been any such case as that—for instance, a man retired as captain performing the duties of a lieutenant?

Admiral COWIE. Not to my knowledge.

Mr. ROBERTS. I never knew of such a case.

Admiral COWIE. We have two or three officers on duty in the Navy Department now, retired officers.

Mr. ROBERTS. They are doing the duty of their rank, are they not, or perhaps higher rank; not certainly of a lower rank?

Admiral COWIE. They are assigned to duty as commanders, or whatever their rank may be.

Mr. ROBERTS. You never take a retired captain or a retired commander and assign him to duty as lieutenant commander?

Admiral COWIE. Certainly not.

Mr. STEPHENS. They have not done so?

Admiral COWIE. Not to my knowledge.

The CHAIRMAN. Let us come back to the appropriation bill, "Freight, Bureau of Supplies and Accounts." I see you are asking for an increase of \$100,000.

Admiral COWIE. Yes, sir; that appropriation is overobligated for the last year \$193,484.54. If I remember rightly it was reduced last year by \$25,000, and the year before, I think, by \$85,000. I stated at the time that it was an appropriation which we could not very well tell about, but freight has been increased, due to the fact that we have been taking advantage of the land-grant roads and getting the freight in that way. We have also commenced to purchase f. o. b. works, and taken over materials at the works instead of delivered at the different navy yards, in order that the Government could get the benefit of the land-grant rates and save on freight rates.

The CHAIRMAN. In other words, let the Government transport its property instead of its being the property of the other person?

Admiral COWIE. Exactly, because we can get cheaper rates than the parties furnishing the material. We need the \$100,000 extra, and I think that will not be sufficient. At the same time, in talking the matter over with the Secretary, he thought that would be enough, and I think that inasmuch as freight is an appropriation that can be exceeded, we can manage with \$100,000 more and take care of any deficiency later.

Mr. WITHERSPOON. I would like to ask the admiral a question about that. Those are freights composed very largely of freight on coal that we ship from the Atlantic to the Pacific coast, are they not?

Admiral COWIE. Freight on coal comes out of "Coal and transportation."

Mr. WITHERSPOON. And that is not included in this?

Admiral COWIE. Not included in this; no, sir.

Mr. WITHERSPOON. I understand you to say, then, that this additional appropriation for freights is in order to allow the Government to make contracts for its own freights, instead of including that in the price of the coal?

Admiral COWIE. Not the coal; this is other materials, such as ordnance, and things of that kind that are manufactured at different places that we are sending to the west coast, they would be delivered at Mare Island, Puget Sound, or Cavite.

Mr. WITHERSPOON. And the person that furnished them to the Government would pay the freight?

Admiral COWIE. He would pay the freight, but now I take advantage of the land grant rate and purchase f. o. b. works, and the Government pays the freight, and in one case a short time ago I saved about \$25,000 on shipments.

Mr. WITHERSPOON. Then if we increase that appropriation to \$100,000 for that purpose, ought not this appropriation for those articles on which the Government pays the freight be decreased \$100,000?

Mr. ROBERTS. This is not an increase of \$100,000 for that purpose?

Admiral COWIE. There was a deficiency of \$193,000 last year, so I think it should be increased at least \$100,000 more.

The CHAIRMAN. We cut it too much a year ago.

Admiral COWIE. We cut it last year and the year before; but in 1912 we had a balance, while last year we had more freight and over-obligated the appropriation about \$193,000.

There is another thing about that item of freight. We can not always get it accurately at the end of the year as to amounts, because the railroads do not get in the bills of lading and necessary vouchers in time for entry.

Mr. ESTOPINAL. You want to make your own arrangements for freight?

Admiral COWIE. Yes; when the Government would have the advantage and we can save money.

Mr. ROBERTS. If we only appropriated \$1, they could still make those same arrangements; but this increase is in order to prevent, as far as possible, any deficiency?

Admiral COWIE. Exactly. In other words, to try to provide enough in the appropriation for freight to meet our obligations.

Mr. WITHERSPOON. Then we ought to appropriate that much less, ought we not?

Admiral COWIE. We have not enough in the bill now.

The CHAIRMAN. This has run over; they did not have enough last year to pay the freight. This year their freight bills are more.

Mr. WITHERSPOON. That is a good reason, if that is the reason, but that is not the reason he suggested. The reason he suggested was that heretofore we have been paying the freight in the price of the goods—the owner has been paying the freight. Now we propose to pay it ourselves. If that is the reason why, then the appropriation for the price of the goods ought to be decreased.

Admiral COWIE. Instead of increasing the freight by \$193,000, which I should—

Mr. ROBERTS. That freight in the price of the goods heretofore came out of this appropriation just the same?

Admiral COWIE. No, sir.

Mr. ROBERTS. Only it was a greater amount than the department now secures by dealing directly with the railroads. While the price of the goods included in a sense the freight, yet the particular part of that deal shown in there as so much for goods and so much for freight, the freight part of it came out of this appropriation?

Admiral COWIE. No; that is not correct. When contractors deliver material at a navy yard, charges prepaid, the amount of the freight is charged against the appropriation which pays for the material. I find I can make arrangements and get bids from different railroads. They are allowed to do that, under the Interstate Commerce Commission, for the Government at a lower rate than

the regular tariff, where they get in competition with each other; they are allowed to do that, and in that way we can take advantage of any large shipment and have the railroads compete for the hauling.

Mr. ESTOPINAL. If it is going to cost less, why do you ask for more money?

Admiral COWIE. Because we are nearly \$200,000 short on this year, and are asking for only \$100,000 more.

Mr. STEPHENS. You say the railroads are allowed to enter into competition with each other to make a lower rate for the Government than they are to any other large shippers?

The CHAIRMAN. Yes, sir; that is correct. The Government is not under the Interstate Commerce Commission regulations. The interstate commerce restriction does not apply to the Government. They were exempted under the law.

Turn now to page 46, and you will notice the table covering the distribution of equipment. We have appropriations for equipment, and under the distribution I notice that the Bureau of Supplies and Accounts was awarded, under the item of stationery for commanding and navigating officers of ships, chaplains on shore and afloat, and for use of courts-martial on board ships; purchase, repair, and exchange of typewriters for ships; the removal and transportation of ashes from ships of war; musical instruments and music, and various other items mentioned there, \$260,000?

Admiral COWIE. Yes, sir.

The CHAIRMAN. That is the estimate out of this appropriation this year. What were you allotted last year?

Admiral COWIE. Two hundred and eighty-five thousand dollars for 1913 was the total allotment under "Equipment of vessels" to Supplies and Accounts, and for 1914 it is \$350,000.

The CHAIRMAN. You are getting out of the estimated appropriation bill this year \$260,000. Did you have any unexpended balance last year out of your \$285,000?

Admiral COWIE. I had under Supplies and Accounts equipment a balance of \$28,613.94 for 1913.

The CHAIRMAN. You have reduced it, then, \$20,000 there?

Admiral COWIE. Yes, sir; that is for last year; but I want to state to the committee, in order to do that and because the equipment had always run over heretofore, I cut down everything, right and left, and there are many things I did not give that I really believe the ships should have had, and I do not think it would be good policy to sail as close to the wind again, because I think some of the articles required should have been allowed.

The CHAIRMAN. But you are cutting it down this year. Last year it was \$285,000 and this year it is \$260,000.

Turn to page 46 and you will see.

Admiral COWIE. The total allotment for 1913 was \$285,000, for 1914 it is \$350,000, and for 1915 (exclusive of classified employees), it is reduced to \$337,000. Perhaps, in the event of the abolishment of that bureau—

The CHAIRMAN. We have allowed for purchase of all other articles of equipage at home and abroad, for the payment of labor in equipping vessels therewith, and manufacture of those articles in the several navy yards, \$77,000.

Admiral COWIE. That will make it all right when the two items are combined.

The CHAIRMAN. What did you have under that item last year?

Admiral COWIE. I had to purchase \$72,611.79 under that item for 1913.

The CHAIRMAN. So you are reducing the other one \$20,000 and you are increasing this?

Admiral COWIE. By \$4,000 and something, yes, sir; over 1913. The reduction of 1915 from 1914 is \$13,000.

The CHAIRMAN. Then, classified service, \$45,000 under the proposed arrangement. What did you get last year under that item?

Admiral COWIE. Classified service, last year, I think was all under the Secretary's office, and I am in a little doubt as to just how that was divided.

Mr. ROBERTS. What does that mean, "classified"?

Admiral COWIE. All Bureau of Equipment clerical force appropriation was taken up in the Secretary's office, then divided between the different bureaus, and the articles of equipment were also assigned these different bureaus. I have here the expenditures under every item of my appropriation under equipment:

Comparative statement "Equipment of vessels (Supplies and accounts)."

[Nov. 20, 1913.]

Description.	1911	1912	1913	Increase, 1913 over 1912.	Decrease, 1913 under 1912.
Appropriations (allotments).....	\$244,400.00	\$270,000.00	\$285,000.00	\$15,000.00	
Credits, miscellaneous.....	19,654.42	11,916.71	12,826.58	909.87	
Total credits.....	264,054.42	281,916.71	297,826.58	15,909.87	
Expenditures:					
Buildings.....	117.40				
Yard appliances.....	4.60				
Floating property.....	1,034.52	369.95	49.46		\$330.49
Power plants.....	83.80				
Naval Militia.....	3,545.10	384.16			384.16
Furniture.....	34.50				
Office supplies and equipment.....	161.24	599.45	118.72		480.73
Handling material.....	25.00		2.92	2.92	
Tugs and lighters.....	5,059.50	1,828.30	1,369.60		488.70
Telephone and telegraph.....	8.43				
Storekeeping.....	128.87		79.48	79.48	
Office force.....	254.46	.22			.22
Removal of refuse.....	248.70	1,933.73	128.60		1,805.13
Disability.....	3.31		4.67	4.67	
Machinery and tools.....	43.26		22.40	22.40	
Leave.....	29.47	.04	11.91	11.87	
Holiday.....	55.46		14.95	14.95	
Incidentals.....	8,296.87	1,126.62	1,420.93	294.31	
Inspection department.....	.87	40.01			40.01
Radio stations.....	20,417.12				
Miscellaneous.....	2,360.82	2,844.83	2,520.60		324.23
Over and under absorbed.....		7.69	68.07		54.38
Conversion account.....	573.94				
Contract of repairs of articles in store.....	9,891.91	2,404.17	2,012.07		392.10
Repairs to equipage of vessels.....	1,284.48	506.21	8,260.14	7,753.93	
Purchases, ashore.....	3,141.34		126.00	126.00	
Purchases, afloat (equipage and supplies).....	1,383.96				
Deterioration.....		25,926.72	19,891.57		6,035.15
Equipage, supplies from other ships' departments, dumping ashes, etc.....	10,608.48	2,719.24	4,754.07	2,034.83	
Outstanding requisitions and contracts.....		6,400.63	2,805.58		3,595.05
Equipage and supplies drawn from store.....		16.05	307.38	291.33	
	184,969.25	222,742.38	225,373.66	2,631.28	
Total expenditures and obligations.....	253,766.66	269,835.02	269,212.64	13,267.97	13,890.36
Unallotted balance.....	10,287.76	12,081.69	28,613.94		
Total debits.....	264,054.42	281,916.71	297,826.58		

Comparative statement of "Contingent, equipment," 1913

[Dec. 1, 1913.]

Description.	Naviga- tion.	Construc- tion and Repair.	Steam Engineer- ing.	Supplies and Accounts.	Total.
Appropriations (allotments), total credits..	\$3,200.00	\$2,400.00	\$2,000.00	\$2,400.00	\$10,000.00
Expenditures:					
Heat, light, power, etc.....				297.88	297.88
Handling material.....			405.14		405.14
Storekeeping.....				1,734.93	1,734.93
Incidentals.....	2,927.79	1,354.02			4,281.81
Miscellaneous.....	202.24		67.68		269.92
Over and under absorbed.....				1.78	1.78
Outstanding requisitions and contracts.....			33.09		33.09
Total expenditures and obligations..	3,130.03	1,354.02	505.91	2,081.03	7,020.99
Unallotted balance.....	69.97	1,045.98	1,494.09	368.97	2,979.01
Total credits.....	3,200.00	2,400.00	2,000.00	2,400.00	10,000.00

Comparative statement of "Coal and transportation, Supplies and Accounts."

Description.	1911	1912	1913	Increase 1913 over 1912.	Decrease 1913 under 1912.
Appropriation (allotment).....	\$3,469,160.00	\$3,489,700.00	\$3,370,000.00		\$119,700.00
Credits, miscellaneous.....	221,471.61	268,848.35	28,054.43		240,793.92
Total credits.....	3,690,631.61	3,758,548.35	3,398,054.43		360,493.92
Expenditures:					
Grounds.....	206.36				
Buildings.....	450.28				
Floating property.....	41,830.30	17,280.48	29,210.43	\$11,959.95	
Heat, light, power, and water...	4,264.90	8,907.60	3,717.30		5,190.30
Furniture.....	344.24				
Models and experiments.....		152.09	7.12		144.97
Handling material.....	1,040.54	118.29			118.29
Tugs and lighters.....	76,770.37	118,461.83	148,572.78	30,110.95	
Telephone and telegraph.....	390.00				
Vehicles and live stock.....	718.16				
Storekeeping.....	42.11	2,390.61	983.76		1,396.85
Naval Militia.....	587.41				
Power plants.....	9,618.80		7,144.62	7,144.62	
Removal of refuse.....	95.62				
Machinery and tools.....		19.49			19.49
Leave.....	152.40	105.12	227.64	122.52	
Holiday.....	270.60	141.74	220.56	78.82	
Incidentals.....	3,992.00	187.42	11,812.23	11,624.81	
Coaling plants.....	6,843.08				
Radio stations.....	241.85	8,058.23	11,050.13	2,991.90	
Conversion account.....		2,062.63			2,062.63
Miscellaneous.....	34,198.61	2,955.75	2,821.93		133.82
Over and under absorbed.....		3.71	9.48		7.19
Purchases, ashore.....	49,075.33				
Purchases, afloat.....	452,987.51	312,765.99	380,870.30	68,104.31	
Deterioration.....		19,497.08	16,483.21		3,013.87
Electric current and water for ships, and miscellaneous.....	70,453.72	7,025.04	5,802.01		1,223.08
Equipment and supplies.....	2,965,282.95	3,384,656.12	3,684,669.79	300,013.57	
Outstanding requisition and con- tracts.....	3,596.76	17.50	520.04	502.54	
Total expenditures and obliga- tions.....	3,723,463.90	3,884,766.82	4,304,110.37	432,653.99	13,310.44
Unallotted balance.....	38,838.89	180,118.47	806,065.94		
Total debits.....	3,690,631.61	3,758,548.35	3,398,054.43		

Comparative statement of "Coal and transportation, 1913."

(Dec. 1, 1913.)

Description.	Yards and Docks	Steam Engineering.	Supplies and Accounts.	Total.
Appropriations (allotments).....	\$180,000.00	\$450,000.00	\$3,370,000.00	\$4,000,000.00
Credits, miscellaneous.....	494.00	4,239.25	28,054.43	32,787.68
Total credits.....	180,494.00	454,239.25	3,398,054.43	4,082,787.68
Expenditures:				
Grounds.....	1,533.26	465.30		1,998.56
Buildings.....	5,718.29	161.12		5,879.41
Yard appliances.....	1,800.00			1,800.00
Floating property.....		2,134.30	29,210.43	31,344.73
Heat, light, power, etc.....	13.94	797.10	3,717.30	4,528.34
Water front.....	6,563.19			6,563.19
Office supplies and equipment.....	1,907.01	15.13		1,922.14
Models and experiments.....		1,029.12	7.12	1,086.24
Handling material.....		14,175.08		14,175.08
Tugs and lighters.....	21.98	791.47	148,572.78	149,386.23
Vehicles and live stock.....		684.00		684.00
Storekeeping.....	97.90	12,135.82	983.76	13,217.48
Office force.....		658.03		658.03
Power plants.....	277.73	720.31	7,144.62	8,142.66
Removal of refuse.....		50.80		50.80
Machinery plant.....	1,343.36	1,107.50		2,450.86
Machinery and tools.....	298.69	1,369.92		1,668.61
Leave.....	1,039.68	6,819.38	227.64	8,086.70
Holiday.....	1,129.46	5,064.50	220.56	6,414.52
Disability.....	248.59	920.87		1,169.46
Incidentals.....		1,578.44	11,812.23	13,390.67
Coaling plants.....	85,992.70	80,459.63		166,452.33
Radio stations.....		230.22	11,060.13	11,290.35
Miscellaneous.....	25,449.46	117,838.48	2,821.98	146,109.92
Over and under absorbed.....	68.78	154.91	5.48	\$207.17
Purchases, ashore.....		3,520.82		3,520.82
Purchases, afloat.....		398.05	380,870.30	381,268.35
Deterioration.....	23.74	124.18	16,483.21	16,631.13
Electric current and water for ships, and miscellaneous.....		43.34	5,802.01	5,845.35
Equipment and supplies, drawn from stores.....			3,684,669.79	3,684,669.79
Outstanding requisitions and contracts.....	21,005.66	7,868.40	520.04	29,394.10
Total expenditures and obligations.....	153,895.92	261,026.40	4,304,110.37	4,719,032.69
Unallotted balance.....	26,598.08	193,212.85	908,065.94	688,245.01
Total debits.....	180,494.00	454,239.25	3,398,054.43	4,082,787.68

Mr. ROBERTS. Would not "clerical service" be more than classified? Clerical service might be something outside of the civil service.

The CHAIRMAN. It is understood as civil service.

Admiral COWIE. They could make that clerical, drafting, etc. That arrangement would be very satisfactory to me.

The CHAIRMAN. Then coal and transportation. There is where you come to coal and transportation. You get from equipment \$4,800,000. That was the amount appropriated. They turn the whole of coal and transportation over to you, do they not? Five million dollars was what was appropriated last year.

Admiral COWIE. We are asking for the same amount.

Mr. ROBERTS. We are asking for the same amount. That is a different bureau. Supplies and Accounts only get \$4,800,000.

The CHAIRMAN. He gives \$200,000 of it to Yards and Docks. On page 41 you will see the total appropriation for coal and transportation is \$5,000,000, the same as it was last year, and \$4,800,000 is transferred to you and \$200,000 is transferred to Yards and Docks.

Admiral COWIE. Yards and Docks has coaling plants, making repairs, and things of that kind, which really come under their supervision.

Mr. WITHERSPOON. Admiral, is that \$4,800,000 based on the assumption that all the coal to be used on the Pacific on the ships over there is going to be shipped from the Atlantic coast?

Admiral COWIE. Yes, sir.

Mr. WITHERSPOON. Can you tell me whether or not they expect to get any of the Alaskan coal that we have been appropriating for for two or three years?

Admiral COWIE. The Alaskan coal proposition has not been fully reported on yet.

The CHAIRMAN. There is no way of getting it yet—no railroads have been built.

Admiral COWIE. They have gotten out of the Matanuska fields during this last year about 900 tons, and the question now is of transporting it and getting it down to tidewater, where it can be loaded on one of our vessels for test.

Mr. WITHERSPOON. What I wanted you to state is whether they have tested that or not?

Admiral COWIE. They have tested some of the Bering River coal, but that has not been fully tested. They are still waiting for that, and I think when the engineer in chief comes here he will be ready to give you the latest information they have on it. The Matanuska field, from which they have gotten out about 900 tons, has been under the Director of Mines, who has had charge of that whole business. He stated to the Secretary the other day that there is no question but what he can get it to tidewater. They were delayed somewhat in trying to get bids for having it hauled down to the sea.

Mr. WITHERSPOON. Hauling the part they want to use to test?

Admiral COWIE. To test; yes, sir.

Mr. WITHERSPOON. They have tested one part of it?

Admiral COWIE. They have tested some of the Bering River coals.

Mr. WITHERSPOON. Did the test show that it was suitable to use on the ships?

Admiral COWIE. The tests were not as satisfactory, I think, as they hoped they would be, but they have not fully completed those tests. The engineer in chief will probably give you better information on that point than I can.

Mr. ROBERTS. They have not yet tested any of the Matanuska?

Admiral COWIE. The Matanuska coal has not been tested.

Mr. ROBERTS. None of the 900 tons we have provided should be brought out?

Admiral COWIE. That has not been brought down.

The CHAIRMAN. The Matanuska was the last and the Bering River was the first. They have partially tested the Bering River; they have not made any test of the Matanuska.

Mr. ROBERTS. They have not got the coal to test it?

Admiral COWIE. No; they have gotten out this 900 tons, and the question now is about transportation down, and that amount of \$75,000 which was appropriated they say will have to be increased in order to pay the transportation. It will cost about \$32,000, they estimated.

Mr. BROWNING. How do you propose to get it down?

Admiral COWIE. They have purchased horses and sleds and everything of that kind. I have a long report here from the Director of Mines.

Mr. BROWNING. It will take a good many horses and sleds to pull 900 tons of coal down?

Admiral COWIE. Yes, sir. They got, I think, 50 horses, 20 two-horse sleds, 15 one-horse sleds, 6 wagons, and employed 25 teamsters, 5 trail makers, 3 cooks, and a blacksmith.

Mr. BROWNING. How far have they to haul it?

The CHAIRMAN. About 140 miles.

Mr. ROBERTS. As I recall, 146 miles.

Admiral COWIE. The distance from the coal fields to tidewater, 60 miles; and there will be an additional 15 miles by barge to nearest ship anchorage. Transportation will be by sleds on ice and snow during the winter or early spring months.

Mr. WITHERSPOON. We made two appropriations of \$75,000 each. Do you mean that has been exhausted?

Admiral COWIE. The first \$75,000 that was provided was used for the Bering River fields, and I have a report to-day showing that there will be about \$866.71 of that unobligated. For the \$75,000 for the Matanuska coal we have not yet had any report.

Mr. WITHERSPOON. You do not know whether that is exhausted or not?

Admiral COWIE. From the statement made to the Secretary by the Director of Mines, which I have here, he practically says that it is exhausted, but the Bureau of Supplies and Accounts has not received any returns from the parties who were made disbursing officers, because they stated they could not get them in on account of some difficulties up North. The accounts should have been rendered some time ago, and I will endeavor to get them as soon as possible.

Mr. WITHERSPOON. Have you any item in this bill appropriating more money for the purpose of completing that test?

Admiral COWIE. No, sir.

Mr. WITHERSPOON. If those other appropriations are actually exhausted, how are we going to complete the test without some appropriation?

Admiral COWIE. By taking it out of coal and transportation. They have the coal mined. You see, we have an appropriation for coal and transportation.

The CHAIRMAN. I will ask you to state whether this coal and transportation covers oil.

Admiral COWIE. Yes, sir.

The CHAIRMAN. State how much coal was purchased during the last fiscal year, and the price; and how much oil was purchased, and the price.

Mr. ROBERTS. And contrast that with the year before.

Admiral COWIE. I will give you the consumption.

Mr. WITHERSPOON. Mr. Chairman, let me understand that. What do you mean by the last fiscal year?

The CHAIRMAN. Ended the last day of last June.

Admiral COWIE. The fiscal year of the Government ends on the 30th of each June.

In 1911 the consumption was 744,423 tons; 1912, 729,903; 1913, 658,813 tons. The average cost of this was, for 1911, \$4.25; for 1912, \$4.07; for 1913, \$4.53.

Mr. WITHERSPOON. That includes all of the coal?

Admiral COWIE. That includes all of the coal for this appropriation.

Mr. WITHERSPOON. What is the average of the cost of your coal, without transportation?

Admiral COWIE. The coal for 1912, average cost per ton was \$2.63; for 1913, \$2.96; and for 1914, which is this year, we have contracts for \$2.90—that is at tidewater, down at Hampton Roads. Now, then, we have different prices at New York, Philadelphia, and Baltimore.

Mr. WITHERSPOON. What are those prices?

Admiral COWIE. New York, 1912, was \$3.20; 1913, \$3.25 to \$3.40, and 1914 we have a contract made for \$3.40.

At Philadelphia, 1912, \$2.77 to \$2.99, according to the method of delivery, of course, delivered up in the plant at Philadelphia or alongside the ship in barges, etc., from \$2.70 to \$2.99; in 1913 it was \$2.75 to \$2.99, and for 1914 the contract is \$2.97 to \$3.09 and \$3.19.

In Baltimore, July, 1911, to April, 1912, was \$2.50; from April 1, 1912, to June 30, 1912, \$2.70. We made two contracts for six months each in the fiscal year 1913 at \$2.70 and \$3.

The CHAIRMAN. You can put those tables in, all of them, so that we can have them. You used the words "coal consumed," does that mean all of the coal purchased and put in storage?

Admiral COWIE. No, sir; that means the consumption.

The CHAIRMAN. What was the total amount of coal purchased last year.

Admiral COWIE. Coal purchased in 1912 was 804,544.61 tons, and in 1913, 900,092.48 tons.

Mr. ROBERTS. Have you contracted for 1914?

The CHAIRMAN. What was it for—1913?

Admiral COWIE. \$2.96 for 1913 and for 1914 we have contracted at \$2.90.

Mr. ROBERTS. Have you contracted for a given number of tons in 1914—you do not contract in that way?

Admiral COWIE. No.

Mr. ROBERTS. You ask for so many tons, more or less?

Admiral COWIE. We contract for coal to be delivered in any quantity we require and at any time.

The CHAIRMAN. How much did you buy in 1913?

Admiral COWIE. 900,092.48 tons; that is domestic coal. Now, foreign coal purchased, was for 1913, 45,748.13 tons.

The CHAIRMAN. What did you say was the price of your coal? Was that for the same as the coal consumed?

Admiral COWIE. The coal consumed, of course, would have added to that the cost of transportation; for instance, if we send it around to the Pacific coast.

The CHAIRMAN. What I want to get at, Admiral, is what was your opinion as to the cost of coal for those years, delivered at these different places?

Admiral COWIE. Those are the costs that I have mentioned and the prices were very reasonable—as we require the very best coal and that it be delivered at any time in any quantity we direct.

The CHAIRMAN. For 1913?

Admiral COWIE. Yes.

The CHAIRMAN. Then, how much coal did you transport to the Pacific coast, the Philippines, and the Asiatic coast?

Admiral COWIE. I can give you the amount to different places.

The CHAIRMAN. What does that cost per ton?

Admiral COWIE. That costs \$7.02 per ton for transportation to Pacific and Asiatic stations.

The CHAIRMAN. That is for all the points?

Admiral COWIE. Yes, sir; or a total cost of \$1,883,656.70.

The CHAIRMAN. How much of that was transported in domestic vessels and how much in foreign vessels?

Admiral COWIE. Of that amount there was 31,537.50 tons transported in American bottoms at an average cost of \$7.93.

The CHAIRMAN. How much in foreign bottoms, and the cost?

Admiral COWIE. In foreign bottoms 236,646 tons, costing \$1,633,286.88.

The CHAIRMAN. What was the cost per ton on foreign bottoms?

Admiral COWIE. \$6.90 per ton was the average.

Mr. WITHERSPOON. Admiral, my recollection is that last year you told us that the cost of coal transported to the Pacific coast, including the freight, was about \$9. I remember distinctly that there was a lot of coal we got over there that cost \$9. Do you mean to say it is cheaper this year than last year?

Admiral COWIE. It cost last year \$9. The average cost of coal and its transportation to the Pacific coast in 1912 was \$7.39, \$8.07, and \$8 in foreign bottoms and \$10.14 in American bottoms.

Mr. WITHERSPOON. Yes, sir; I remember the table in the hearings; is not that so?

The CHAIRMAN. I do not remember that.

Mr. WITHERSPOON. I do; it was \$9 and something a ton. Do you apprehend that when we open the Panama Canal that we are going to get this coal transported any cheaper?

Admiral COWIE. Decidedly.

Mr. WITHERSPOON. Do you think that free tolls we are giving these vessels is going to redound to the benefit of the Government in freight rates on coal?

Admiral COWIE. I think it will. It is a shorter trip, of course. Yes, sir; I think very materially to the Government's benefit, as it will enable American vessels to quote correspondingly lower prices and give both American and foreign vessels a shorter haul.

Mr. ROBERTS. It shortens the distance and they can make more trips through the Canal than they can around the Horn.

Admiral COWIE. I think unquestionably that will reduce the cost very much.

The CHAIRMAN. I want to take up the question of fuel oil. How much fuel oil did you purchase?

Admiral COWIE. Fuel oil, 1911, consumption was 5,778,657 gallons, at \$0.0227 per gallon; 1912, 14,146,714 gallons, at \$0.024 per gallon; 1913, 15,194,879 gallons, at \$0.032 per gallon. The price for 1914 that I have gotten for it, however, is \$0.033 f. o. b. Port Arthur, Tex., a difference of 1 mill, it being \$0.032 for 1913.

The CHAIRMAN. How much did you buy last year? Just put in your hearings what you bought. We will not stop to take up the difference between consumption and the amount bought in round numbers, but I would like to have you state in the hearings how much coal you have stored at the different places and how much oil

you have stored at the different places. Also, what is your estimated amount of oil for the next fiscal year, also of coal.

Admiral COWIE. Yes, sir; for 1915. (See statements attached.)

COAL.

Estimated coal for consumption by fleet, 1915, 650,000 tons; fuel oil, 30,000,000 gallons. These figures are only approximate; the consumption of course depends upon the number of ships in commission and the movements of the fleet.

	Fiscal year.	Tons.	Average price.	Total.
Coal consumed by fleet.....	{ 1912	729,903.00	\$4.07	\$2,971,543.05
	{ 1913	658,813.00	4.53	2,990,331.98
Coal purchased, domestic.....	{ 1912	804,554.61	2.63	2,123,018.74
	{ 1913	900,092.48	2.96	2,663,141.86
Coal purchased, foreign.....	{ 1912	18,664.10	6.21	116,042.14
	{ 1913	45,748.13	5.09	370,242.31

	1912	1913	1914
Cost of coal:			
New York.....	\$3.20	\$3.25-\$3.40	\$3.40
Philadelphia.....	2.77- 2.99	2.75- 2.99	2.97- 3.19
Baltimore.....	2.50- 2.70	2.70- 3.00	2.90
Norfolk.....	2.50	2.70- 3.00	2.90

Amount of coal on hand at coaling plants, July 1, 1913.

	Tons.		Tons.
Frenchmans Bay.....	56.00	Sitka.....	5,624.20
Portsmouth.....	4,332.60	Puget Sound.....	23,548.17
Boston.....	13,288.77	Mare Island.....	6,276.00
Bradford.....	33,697.00	California City Point.....	103,778.50
New London.....	3,725.00	Pichilique Bay.....	2,014.79
New York.....	3,600.39	San Diego.....	3,966.00
Philadelphia.....	1,440.00	Yokohama.....	4,304.00
Washington.....	348.13	Cavite.....	26,285.32
Annapolis.....	1,479.25	Olongapo.....	1,882.42
Norfolk.....	4,094.67	Honolulu.....	49,484.00
Charleston.....	1,055.78	Tutuila.....	3,777.17
Key West.....	4,676.00	Guam.....	1,911.65
New Orleans.....	337.50		
Guantanamo.....	19,829.10	Total.....	¹ 324,812.41

¹ This total differs by 958 from amount as stated in my annual report, owing to late returns from distant stations.

Shipments of coal to Pacific coast, Hawaii, and the Philippines during the fiscal year 1913.

Station.	Tons.	Cost per ton.		Cost of coal.	Cost of transportation.	Total cost, coal and transportation.	Average cost per ton, coal and transportation.
		Coal.	Transportation.				
FOREIGN BOTTOMS.							
Puget Sound	34,560.00	\$3.02	\$7.55	\$104,629.83	\$260,974.24	\$365,604.07	\$10.57
Hawaii	45,675.50	2.97	5.85	135,993.60	267,492.15	403,485.75	8.82
Mare Island	18,426.00	3.02	10.58	55,771.71	194,951.38	250,723.09	13.60
California City Point	81,585.00	2.93	6.62	239,255.94	540,799.70	780,055.64	9.55
San Diego	5,935.00	3.07	8.75	18,220.45	51,894.76	70,115.21	11.82
Cavite	50,464.50	2.86	6.28	144,807.13	317,174.65	461,981.78	9.14
Total	236,646.00	2.95+	6.90+	698,678.66	1,633,286.88	2,331,965.54	9.85+
AMERICAN BOTTOMS.							
Mare Island	17,748.00	2.77	7.77	49,418.10	138,009.76	187,427.86	10.54
California City Point	13,789.50	2.84	6.33	39,186.30	112,360.06	151,546.36	9.17
Total	31,537.50	2.80+	7.93+	88,604.40	250,369.82	338,974.22	10.74+
Total foreign and American, 1913 ..	268,183.50	2.93+	7.02+	787,283.06	1,883,656.70	2,670,939.76	9.96

Over 50 per cent of the above shipments were made in time-chartered vessels for particular reasons, to meet unusual conditions, and can not be considered as a normal rate.

The rates below may be taken as the average paid for transportation from Hampton Roads and Baltimore:

To San Francisco, \$4.88 to \$5.34 for foreign bottoms; \$6.50 to \$7.32, American.

To Hawaii, \$5.09 to \$5.44 for foreign bottoms.

To Manila, \$5.37 to \$6.15 for foreign bottoms.

FUEL OIL.

	Fiscal year.	Gallons.	Average price per gallon.	Total.
Fuel oil purchased.....	1913	21,834,990	\$0.035	\$774,777.00
Fuel-oil prices, 1914, at main port of supply, Port Arthur, Tex., \$0.033 per gallon.				
Fuel oil, consumption by vessels.....	1912	14,146,714	.024	340,387.07
	1913	15,194,879	.032	490,627.87

Fuel oil not issued to vessels was issued for various purposes ashore and charged to proper appropriations.

Total fuel oil on hand at shore stations on June 30, 1913.

Station.	Gallons.	Value.
Washington.....	4,773	\$250.78
Portsmouth, N. H.....	24,964	1,042.91
Texas Co.'s tank (Norfolk).....	346,612	10,036.41
Norfolk.....	796,632	24,277.45
New York.....	245	14.16
Key West.....	723,880	16,441.31
Guantanamo.....	1,123,837	33,715.11
Charleston.....	667,932	16,009.29
Melville.....	1,500,640	67,044.48
Boston.....	12,565	508.88
Philadelphia.....	14,047	599.41
Total.....	5,216,127	109,990.19

Average price per gallon, \$0.0325.

Fuel oil purchased on Pacific coast, including Hawaii, during fiscal year 1913 amounted to 5,655,410 gallons, costing \$107,470.26; average price, \$0.019003.

The CHAIRMAN. There is a little item of "Contingent, Bureau of Equipment, \$2,400." This is a division of that contingent that was used on that?

Admiral COWIE. Yes, sir.

The CHAIRMAN. The total that was assigned to you from the Bureau of Equipment was \$5,184,400. Of that total did you have any unexpended balance?

Admiral COWIE. Yes, sir; I had under contingent equipment, 1913, a balance of \$368.97, but for coal and transportation there was a big shortage in that last year, something like \$685,000—you see the appropriation was only \$4,000,000 for 1913—and there is a shortage that will be figured out; it amounts to \$686,245.01.

The CHAIRMAN. You have had ships going on cruises, and things of that kind, that takes an extra amount of coal?

Admiral COWIE. Yes, sir; coal and fuel oil.

The CHAIRMAN. This appropriation can not be reduced, then, so far as equipment is concerned.

Admiral COWIE. No, sir.

Mr. ROBERTS. Let me ask the Admiral if the number of vessels in the Mexican waters increases the consumption of coal over the normal—the fleet maneuvers?

Admiral COWIE. Well, I should say, slightly, yes; because the ships are moving about down there, and the consumption is greater.

The CHAIRMAN. There is a question I wanted to ask him in connection with that. I would like, Admiral, for you to put into your hearings the full statement of the comparative cost, or economy, to the Government in the burning of coal and oil.

Admiral COWIE. Yes, sir.

The CHAIRMAN. With reference to the Atlantic and the Gulf coasts and the Pacific coast—the cost of oil on the Pacific coast is less than on the Gulf coast, and the cost of coal on the Atlantic coast is less than that of coal on the Pacific?

Admiral COWIE. Yes, sir.

The CHAIRMAN. And I would be glad for you to state fully with reference to that.

Admiral COWIE. The relative value of coal and fuel oil for steaming purposes is as follows:

Using Port Arthur (Tex.) prices for oil (\$0.0331 per gallon) and Hampton Roads prices for coal (\$2.96), prices pertaining in the Atlantic, it costs a vessel over twice as much to steam 1 mile with oil as with coal. These conditions and figures are reversed in the Pacific, where oil is cheaper and coal more expensive, oil \$0.019003 and coal about \$8.

Among the advantages of oil over coal are: Ability to maintain high speed as long as fuel lasts, better construction of vessel, saving of weight, absence of smoke and noninterference with gunnery, reduction of complement, ease and cleanliness of refueling.

The CHAIRMAN. The question I wanted to ask you is not directly under your hearings, but with reference to another matter—the Naval Militia. We passed that bill in the House day before yesterday, and we carry in this bill an appropriation of \$125,000 a year for the Naval Militia, and the bill has passed authorizing an appropriation of \$200,000 in the bill, and then such additional as we may carry in the appropriation bill?

Admiral COWIE. Yes, sir.

The CHAIRMAN. I notice here in your synopsis, on page 1 of your annual report, you say cost to the Navy of the Naval Militia of the several States, \$45,935.70. Is that the total amount that was paid out of the appropriation of \$125,000 for the equipping of the Naval Militia, or was it just what we paid out of it on your bureau? You check up the whole thing.

Admiral COWIE. That should show the expenditures of stores on board Naval Militia vessels, as reported by those vessels for the fiscal year from Navy appropriations.

The CHAIRMAN. That is what I am talking about. In our own bill here we are carrying an appropriation of \$125,000 for arming and equipping the Naval Militia.

Admiral COWIE. Arming and equipping is another matter.

The CHAIRMAN. I wish you would put in your hearings how much was expended out of that \$125,000 during the last fiscal year on account of the Naval Militia of the several States, and what, if any, unexpended balance there was, so that when we come to make up this bill, if that other bill is passed by the Senate it may not be necessary to carry any of that in this bill here.

Mr. ROBERTS. Mr. Chairman, I have an impression that forty-odd thousand dollars mentioned in the admiral's report is the amount paid out of the other bureaus for the maintenance of these training ships that are loaned to the Naval Militia.

Admiral COWIE. That is what it is, ships turned over to the different States, what was charged to them under cost of commission for stores expended, as stated.

Mr. ROBERTS. I would like to have the admiral state if it is to keep these ships which are loaned to the Naval Militia in good order.

Admiral COWIE. I will have that itemized, and show up just what it is.

Mr. ROBERTS. I do not think that comes out of the \$125,000, which was for the equipping and arming.

The CHAIRMAN. I want him to put it in his hearings. Very likely the Senate will have passed that law, and we will have that. It carries the standing annual appropriation, and I want to see whether it will be necessary to put it in here.

Mr. ROBERTS. I think we have a certain number of men enlisted as petty officers on these ships loaned to the Naval Militia, and I wanted to know about this \$45,000.

The CHAIRMAN. I would like for you to give us a full analysis of the expenditures under the item "Arming and equipping the Naval Militia, \$125,000," and also the items of estimates for the Naval Militia for the next fiscal year—what may be needed.

Admiral COWIE. Yes, sir.

(The statement referred to is as follows:)

The figure \$45,935.70 appearing on the first page of the text of the Paymaster General's annual report, is obtained from statement F, folder No. 5, to follow page 152, column 22, headed "Total expended under Title C, cost of commission," and does not refer to charges to appropriations, but rather to expenditures of stores, which have previously been taken up on board ship. This figure was taken from this statement, as were all other figures, with the exception of the first two, used in this connection. The stores, the value of which are included in this figure, pertain to bureaus as follows:

Equipment.....	\$3,581.69
Ordnance.....	23,558.01
Construction and Repair.....	8,974.11
Steam Engineering.....	4,820.91
Supplies and Accounts.....	.98

Total (for stores consumed)..... 45,935.70

That the committee may clearly understand the total of expenditures for the Naval Militia and Naval Militia ships and the appropriations chargeable therewith, a statement in full follows, from which it will be seen that \$178,810.87 was expended last year from the appropriation "Arming and equipping Naval Militia," and \$235,940.96 from regular Navy appropriations:

Statement of appropriation "Arming and equipping Naval Militia, 1913."

Expenditures:

For arms and accouterments.....	\$39,127.12
For ammunition.....	31,342.83
For fuel, water, and gasoline.....	45,416.50
For clothing.....	48,127.12
For printing or purchase of necessary books of instruction.....	1,901.46
For contingent and miscellaneous (expenses in connection with the organizing and training of the Naval Militia)—	
Salaries.....	\$3,400.00
Manufacture of target material.....	1,931.80
Radio outfits.....	6,574.04
Towing.....	215.00
Engine.....	775.00
	<u>12,895.84</u>

Total expenditures and obligations..... 178,810.87

Receipts:

Appropriation for 1913.....	125,000.00
Balance under continuing appropriation "Arming and equipping Naval Militia," reappropriated, naval act, Aug. 22, 1912.....	50,619.72
Unallotted balance (overobligated).....	<u>3,191.15</u>

Total..... 178,810.87

In addition to the above expenditures under the appropriation "Arming and equipping naval militia, 1913," stores were transferred from the various navy yards and stations to Naval Militia ships, and repairs were made to hull and machinery and equipage during the fiscal year 1913 on account of regular Navy appropriations under the cognizance of bureaus as follows:

	Stores issued.	Repairs to hull and machinery and equipage.	Total.
Equipment.....	\$21,107.63	\$4,416.93	\$25,524.56
Ordnance.....	85,355.51		85,355.51
Construction and repair.....	55,847.41	24,643.64	80,491.05
Steam engineering.....	33,373.05	11,196.79	44,569.84
Total.....	<u>195,683.60</u>	<u>40,257.36</u>	<u>235,940.96</u>

The aggregate, therefore, of expenditures and obligations by the Navy from all appropriations for the Naval Militia for the fiscal year 1913 is \$414,751.83, including arming and equipping.

The \$200,000 appropriated in section 10 of the Naval Militia bill, H. R. 8667, is in addition to the appropriations carried in the naval bill as shown by sections 14 to 20 of the Naval Militia bill. No naval appropriation should be reduced, therefore, because of the passage of that bill, which provides for expenditures not now authorized by any existing appropriation.

Mr. ROBERTS. I want to ask the admiral a question on the coal proposition. Do you have brought to your attention, as head of the Bureau of Supplies and Accounts, new supplies of coal—new sources from which coal could be obtained?

Admiral COWIE. Frequently.

Mr. ROBERTS. Have you had brought to your attention this peat coal or peat briquets?

Admiral COWIE. Where is that from?

Mr. ROBERTS. It was called to my attention the other day purely in an accidental way, that parties have devised and invented processes by which they turn the peat into what they call briquets, and the thing that struck me particularly were two statements made by these parties—one was the great number of thermal units in these briquets and the other the remarkable cheapness with which they could be marketed—and it seemed to me if there was any basis of fact for those two statements there was a good field for the Navy Department to investigate with the idea of getting something to take the place of coal at a great deal lower price than we are now paying.

Admiral COWIE. That has not been brought to the attention of the Bureau of Supplies and Accounts; but I will be very glad to look into this and have the parties communicate with us.

Mr. ROBERTS. I did not bring it up with any idea of bringing it to the attention of the department; but the thing came to my attention as something that is going forward—a new development of our resources and the utilization of these peat bogs.

Admiral COWIE. We are glad to look into everything of that kind.

The CHAIRMAN. Another matter, Admiral, that I wanted to call to your attention with reference to coal, is this: We are purchasing practically all of our coal from the West Virginia fields—Georges Creek and Pocahontas. Some time since I received a communication or memorial from the Alabama coal industries, insisting and claiming, giving certain analyses, that their coal was just as good and as available as the West Virginia coal, and that it could be put on board ship at Savannah or Pensacola docks at a very substantial and material reduction in price. Has your bureau given any investigation to that, or would that come under the Bureau of Steam Engineering?

Admiral COWIE. That has been referred to the bureau and has been taken up with the Bureau of Steam Engineering, and I think Admiral Griffin will be able to explain to you fully the reasons why that coal would not meet Navy requirements. Of course, in cases of that kind, where new coal is brought to our attention, we take it up with the Bureau of Steam Engineering, who make inquiries and investigate the subject.

The CHAIRMAN. How many clerks to storekeepers are in the Navy, afloat?

Admiral COWIE. I can not give you the exact number, but we have them on all the large battleships and the large cruisers.

The CHAIRMAN. The reason I was asking was I was a little perplexed over it yesterday, but my memory has been refreshed since. In the appropriation act, some time since, we said "Clerks to accounting officers, ashore and afloat, not exceeding 10." That we corrected by special act, later on.

Admiral COWIE. That was for the accounting officers. You said "accounting and general storekeepers, ashore and afloat," and cut

the thing down really below what it was at that time; and then you corrected it and made it to read "general storekeepers ashore and afloat," which was exactly what we wanted. Now we have general storekeepers' clerks on the first-class ships—the large battleships and the large armored cruisers.

The CHAIRMAN. How many paymasters clerks are authorized under existing law?

Admiral COWIE. My impression is, under existing law we could increase the number that we have very materially by giving all the general storekeepers afloat each a clerk; at the present time we have practically 186 or 188 paymasters' clerks altogether, but the number varies almost from day to day according to the duty status of the different vessels.

The CHAIRMAN. You can put the exact number in.

Admiral COWIE. Yes, sir. In the bill which the Secretary recommended, I think we put that at one for each 250 men in case we needed them.

The CHAIRMAN. Under the present law you could have more than that.

Admiral COWIE. Under the present law we could have more if we put them with all storekeepers on the ships, which of course we are not going to do. We are keeping them down and only putting them on the larger ships where absolutely required, but it is a thing that could not very well be limited. As it is to-day, Congress has designated where these clerks should be employed—navy yards and stations, etc.—and in my recommendations to the department I put it that way, but the department concluded it would be better to fix it so as to allow one clerk for each 250 enlisted men. However, that was figured at first 275 enlisted men, which would practically cut us down on the number we have actually employed now or could employ under existing law.

The CHAIRMAN. I notice here in this letter from the Secretary he refers to it.

Mr. ROBERTS. Did I understand the Admiral had some matters he wanted to call to the attention of the committee?

The CHAIRMAN. If you have anything, Admiral, just put it in the hearing.

Admiral COWIE. Here is the question of containers, a letter written to Mr. Padgett under date of June 3, 1913.

The CHAIRMAN. Put it in the hearings.

(The letter referred to is as follows:)

JUNE 3, 1913.

HON. LEMUEL P. PADGETT, M. C.,
Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.

MY DEAR MR. PADGETT: On February 5, 1913, the United States Senate passed a bill (S. 4607) entitled "An act to amend section thirty-six hundred and eighteen of the Revised Statutes of the United States, relating to the sale of public property." This bill, in the House of Representatives on February 6, 1912, was referred to the Committee on Public Buildings and Grounds. The same bill, numbered H. R. 18233, had been introduced in the House on January 18, 1912, by the chairman of the Committee on Naval Affairs, and was referred to the Committee on Naval Affairs and ordered to be printed. Through the failure of the House of Representatives to take action on either the Senate bill or the bill introduced in the House of Representatives, this act failed to become a law, and it is understood that the bill as passed by the Senate dies with the close of the Sixty-second Congress.

The bill in question is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section thirty-six hundred and eighteen of the Revised Statutes be, and the same hereby is, amended by adding at the end thereof a proviso as follows:

"Provided, That this restriction shall not apply to proceeds received from contractors for bags, reels, barrels, drums, carboys, or other containers used in the delivery of material and returned to them at a price agreed on in the contract, but such proceeds shall be deposited to the credit of the appropriation from which the purchase of the material was made."

The necessity for the enactment of this bill was fully set forth in a communication addressed by my predecessor to the chairman of the Naval Affairs Committee of the Senate, under date of January 15, 1912, as follows:

"Two or three years ago the Bureau of Supplies and Accounts adopted the practice, in advertising for proposals for the furnishing of wire or cable, cement, oil, turpentine, acids, etc., of so preparing the specifications that the price bid should include the value of the reels, bags, barrels, drums, or carboys employed in making deliveries, with the stipulation that, should these containers be returned to him within a prescribed period, the bidder should make refund to the Government therefor at the rate named in his proposal.

"This practice was adopted in order to conform to commercial usage and to insure contractors against loss of the containers. It resulted, it is believed, in securing more favorable bids, besides affording the simplest method of accounting for the containers. In adopting this plan it was intended to pay for the containers from the appropriation from which the material itself was bought, and when reimbursement was received for them to credit the appropriation concerned with the amount thereof, the appropriation paying in such case only the net cost of the material purchased.

"The accounting officers of the Treasury have decided, however, that payments received for containers so returned can not properly be credited to the appropriations from which they were bought, but must be turned into the Treasury as miscellaneous receipts under section 3618 of the Revised Statutes. This section reads:

"All proceeds of sales of old material, condemned stores supplies, or other public property of any kind, except the proceeds of the sale or leasing of marine hospitals, or of the sales of revenue cutters, or of the sales of commissary stores to the officers and enlisted men of the Army, or of materials, stores, or supplies sold to officers and soldiers of the Army, or of the sale of condemned Navy clothing, or of sales of materials, stores, or supplies to any exploring or surveying expedition authorized by law, shall be deposited and covered into the Treasury as miscellaneous receipts on account of "proceeds of Government property," and shall not be withdrawn or applied except in consequence of a subsequent appropriation made by law."

"Accordingly, if the commercial practice should, as is desirable, continue to be followed, naval appropriations would lose the value of the containers, for which reimbursement might be made upon their return to the contractors. This loss would be considerable. In the case of cement, it would amount to from 30 to 40 per cent of the net value of the material. To avoid this loss to naval funds, it is necessary to depart from commercial usage and specify, in inviting bids, that containers shall remain the property of the contractor, to be returned to him when empty and within a stipulated time, the Government to keep and pay for such only as are not so returned. This plan is, however, unsatisfactory to many desirable bidders, and it entails additional work in the accounting department of the navy yards where the material is handled.

"It is the endeavor, in the purchase of naval supplies, to conform, wherever possible, with commercial practice, as by so doing competition is increased and better prices secured. In order that, in this instance, such practice may be followed without loss to the appropriations concerned, I have the honor to recommend that section 3618 of the Revised Statutes be so amended as to permit funds received from contractors in reimbursement for containers returned to them to be credited to the appropriation from which the material was purchased where the contract provides for the return of the containers at an agreed price. For the convenience of the committee the draft of a bill that it is believed will, if enacted, accomplish the desired end is inclosed herewith."

I earnestly request that the bill mentioned be again introduced, and that its enactment into law be secured as early as possible.

Sincerely, yours,

F. D. ROOSEVELT,
Acting Secretary of the Navy.

Mr. ROBERTS. They were telling us how much expense there was for boxes in which they shipped shells and powder—some could be sent back and some broken up and probably might be sold for firewood and something of that sort.

Admiral COWIE. It is a thing that should be carried out.

Mr. ROBERTS. While it is in the contract that he takes them back at a price, yet you have got to turn that money over into "Receipts, miscellaneous."

Admiral COWIE. At the present time. What we want to do is to give the appropriations credit for the proceeds; in other words, to charge them with the net cost of the article.

Mr. PADGETT. Last year we appropriated \$100,000 for the dairy at the Naval Academy. What progress has been made toward securing and preparing the new site?

Admiral COWIE. A farm of 771 acres, located at Gambrell's station, has been purchased at a cost of \$56,725. This leaves a balance of \$43,275 to be expended for buildings, fences, equipment, cost of moving, etc.

In a recent decision the Comptroller of the Treasury held that this money is available for expenditure only until July 30, 1914. I believe it would be economical to extend the time, for the following reasons:

1. The Government does not take possession of the farm until January 1, 1914. It was necessary to allow the owners of the several farms sufficient time to secure their crops and provide other homes.

2. As January, February, and the greater part of March are bad-weather months, it would be better and more economical to delay operations a few months.

3. The plans and specifications are being prepared by the Department of Agriculture, Bureau of Animal Industry. In erecting these buildings it is proposed, when possible, to use the force of the farm, thereby saving the contractor's profit.

4. It will be necessary to erect a number of small houses to house the working force, animals, and implements.

I shall ask the department to recommend the enactment of the following provision:

The unexpended balance of the appropriation for dairy, Naval Academy, Annapolis, Md., contained in the naval appropriation act approved March 4, 1913, is hereby made available for expenditure during the fiscal year ending June 30, 1915.

The herd at present consists of 100 cows, 2 bulls, and 35 heifers. The heifers should freshen about next October. The herd at present gives enough milk for the brigade; but sickness among the cattle is possible, in the event of which there would be a shortage.

These animals are kept in good condition. A veterinary surgeon, detailed by the Department of Agriculture, examines the herd once each week and oftener if necessary.

Everything pertaining to the dairy is severely criticized, and every detail of the work marked or scored in the strictest manner by experts detailed for that purpose.

The CHAIRMAN. Is there anything else, Admiral, that you had?

Admiral COWIE. I wish to call particular attention to the need for admirals and vice admirals. I regard this as the most important

legislation required and believe provision should be made for this at once, irrespective of any other personnel legislation. I have here a memorandum which I will insert, prepared on this subject, showing the necessity for such legislation, and I hope the committee will make provision in this bill for vice admirals, if not admirals.

THE NEED OF ADMIRALS AND VICE ADMIRALS IN THE NAVY.

Keen public interest in the creation of the grades of admiral and vice admiral in the Navy is again being aroused by the recent announcement that effort will be made at this session of Congress to secure the enactment of a law permanently establishing these ranks. Legislation to this effect was sought at the last Congress, but was not obtained. The failure was distinctly a surprise to naval circles, as the absolute necessity for flag officers of these grades had been frequently demonstrated clearly, and it had confidently been expected that remedial action would be taken. What made the failure all the more of a surprise was the fact that the departmental proposal met with the warm and understanding approval of the entire Nation. The people, jealous of national precedence as well as thoroughly alive to the practical advantages thus to be gained, had been quick to appreciate things that add to the safety and dignity of the country. In all the land there was scarcely a dissenting voice raised.

The recommendation for the grades of admiral and vice admiral is based upon sound and far-reaching public policy. It is a matter of comprehensive statesmanship. It transcends all questions of personal motive and advantage. Every year since 1904 the measure has been urged upon the Congress with reasons and examples of the most cogent nature. It is a fact worthy of marked emphasis and one that should bear weight, that without a single exception every chief of the Bureau of Navigation and every Secretary of the Navy has annually, since the year named, advocated the enactment of such legislation. Each recommendation has been strongly worded and has come from technically informed men who would derive no personal advancement in fortune and who are devoted to the interests of the Government in general and of the Navy in particular. Their earnest endeavors along this line have been animated solely by a desire to promote the good of the Naval Establishment and, consequently, of the Nation.

The United States is the only naval power on earth that confides the command of a powerful battle fleet to a rear admiral, who is prevented, whatever his individual capacity, by the very limitations of his low rank from rendering the most efficient services. Personal ability is handicapped by official status. The recognition of this fact should truly give us pause. Even the Chinese, Portuguese, and Danish Navies, which are negligible in comparison with ours, have vice admirals, who take precedence over the commanders in chief of our great Atlantic Fleet, in the handling and fate of which is wrapped up so much of the hope, of the pride, and the destiny of the people. Such a condition of affairs lowers the prestige of the American Nation. The matter is a broader one than the feeling of personal slight and indignity bound to be experienced by any particular flag officer. That phase of the question, however intrinsically just and needful of correction, is entirely lost in the larger ones of national standing and national interests, which must inevitably continue to suffer so long as suitable rank is denied to the commanders of our fleets. It is bitterly humiliating to realize that in any combined operations or international functions where naval forces are involved, the flag officers of our mighty Republic are predestined to take the lowest place, and thus, under the working of world custom and agreement as strong practically as law, prohibited from exercising the degree of control and influence to which, in their representative capacity, they are rightfully entitled. The blush of shame invariably arises with the knowledge that only American flag officers must always submit, with what grace possible, to having their commands placed to the rear in lines of march and fleet formations; must always fire the first salute, always pay the first call, and always yield general precedence to foreign officers at State and social functions or other occasions of public demonstration. The Stars and Stripes are automatically assigned to inferior position. Such surely is not to the liking of our proud people. These relegations have to be acquiesced in without regard to the comparative superiority or dignity of the nations represented. It is merely a truism to assert that the rank of our commanders in chief is altogether incommensurate with the importance of their duties and of the country which they serve. It is also true that this lack of fitting representation of our country by naval officers of a rank commensurate with its own position as one of the foremost in the world is frequently and freely commented upon by the higher officials of other nations, many of them expressing their great surprise at the failure of Congress to have long since supplied this, to them glaring

omission in the personnel of our Navy. They can not understand what reasons control the hostile attitude of that body toward creating positions, which have long since been indisputably necessary to the maintenance of our country's dignity, as well as power as a first-class nation. Its refusal or neglect to act upon a matter of such vital importance on the only supposable ground, that of increased cost, has been greeted with the scorn and ridicule which a reason of so little corresponding weight and so utterly inadequate would seem to justly merit, and this feeling has found place among the rank and file of the navies of other powers, small as well as great, to such an extent that upon all important occasions where rear admirals are called upon to represent our Government they are looked upon as a sort of laughingstock and are subordinated to and treated with but scant courtesy by officials of third and even fourth rate nations.

This unquestionably humiliating position to which American officers have so long been compelled to occupy, and which can not fail but to militate against that esprit du corps which would ordinarily actuate them and to that extent depreciate their efficiency, can no longer exist if Congress will, without delay, act favorably upon the recommendation of the Secretary of the Navy; they will at once be able to take the front rank which belongs to them and to command the respect and wield the authority to which as representatives of the United States they are of right entitled. The resultant benefits which our country will derive therefrom are incomparable considered in connection with the cost in dollars and cents.

Another associated phase of the question worthy of note is, that the heavy cares resting upon a commander in chief in the single matter of properly handling a fleet representing in money value the stupendous total of approximately \$160,000,000, and in lives, the incalculable price of the well-being and safety of 16,000 American seamen, alone make it becoming that in recognition there should be bestowed upon him adequate rank and recompense. The small increase of pay that would be involved would not add one-tenth of one-tenth of one penny to the per capita cost of running the Government. It surely seems that so small a consideration, especially when viewed in connection with the weighty reasons of State set forth, should not prevent the awarding of a just, personal reward in elevation to a higher grade. The efficient safe-guarding of such treasures of ships and lives in the face of the hundred ever-present perils of the sea is a matter of highest duty and gravest responsibility.

As before indicated, lack of proper rank for fleet commanders is not only a question of sentimental pride. Our material interests are also adversely affected in grave international affairs, for, in addition to duties of a purely military nature, circumstances often cause the Government to bestow the greatest trusts in its gift upon our naval commanders in chief, and the wishes of the Government, as voiced through them, are frequently not given proper weight, because of their inferiority in grade standing as compared with the representative foreign officers with whom they have to deal. It is not possible to emphasize too strongly that the important fact is not that our supreme flag officers personally lack prestige on such occasions on account of their relatively low rank, but that the Nation represented in them is forced into a position falsely indicative of its dignity and power. Our Government unwittingly handicaps its representatives, its recommendations, and its requests. A parallel case would be the sending of a diplomat of only ministerial rank to a Government whose standing necessitates the accrediting of a full ambassador.

Such a condition is and has been very unsatisfactory. This is true even in years of comparative peace. It can not be remedied too soon, for critical situations are likely to arise at any time in which our Government's influence can not, in the very nature of things as they are at present, have proper weight. It should never be forgotten that, in any joint matters of importance, the representative of our Government is always in a subordinate position, occupying the lowest place at the council table. How much of a loss in power of accomplishment this means can be appreciated to the fullest only by those who know from experience to what a great degree, in foreign countries, and particularly in the East, prestige and the ability to act are help as coincident with rank and dignity. At international crises, past happenings show how easily possible it would be for delicate complications to arise that would compel the wishes of this Nation to await hearing until those of another, and maybe unfriendly, country, presented by superior rank, had been heard and perhaps complied with, to our detriment if not to our disaster.

The point of moral effect, which is one of the prime objects of a navy, needs also to be borne in mind. Our Navy is weakened in this respect likewise by the long-continued failure of the Congress to create higher flag rank. That this is so is not only a source of keenest personal shame to every man in the service, but it is the cause of deepest chagrin to every American citizen abroad, who is often made to realize the

unenviable position such neglect gives our people in the eyes of citizens of other countries. These are not hypothetical statements. Cooperative action by the powers has frequently occurred heretofore for the preservation of peace and good order and the mutual protection of national interests more or less antagonistic in character. On such occasions our representatives have actually been relegated to inferior phases of joint duties, serving under foreign leadership. And occasions of this nature, as the cause of peace advances, are likely to happen much more frequently in the future, and to involve conflicting policies of even greater scope and more vital moment.

Are the representatives of our Government to continue to be handicapped by their inferior rank? Or are they to be granted the rank necessary, aside from sentiment and regarded from the coldly practical standpoint, to enable them effectively to voice the mandates of our peace-loving Nation? It is for the Congress to decide. What the answer should be is palpably evident. Men clothed with the authority of the great Republic should be given equal precedence with the representatives of other world powers. In their rank and dignity should be reflected that of the mighty people for whom they speak. There should be none so dull or so ignorant as to question the patriotic wisdom of this.

An admiral should command a fleet; a vice admiral should command a squadron; a rear admiral should command a division. This is the logical procedure. For this reason alone such assignments should be made possible in our Navy, aside from the fact that it is the method universally in vogue among the strong nations with whom, willing or not, we have to deal, and hence, to say the least, has the practical advantages of conformity. It is not too much to say that any other system is utterly subversive of military discipline, and therefore, in varying degree, of military efficiency. It is opposed to all common sense, as well as to the niceties of propriety, for a commander in chief to bear the same rank and title as the subordinate division and squadron heads under his flag.

The foregoing shows clearly the need for legislation providing for admirals and vice admirals in the Navy, and in addition I will insert an article which I have prepared which I think shows with equal clearness that officers of these grades should be given permanent commissions and not be merely promoted to the grades of admiral and vice admiral while they are actually serving on sea duty in command of fleets or squadrons.

ARTICLE ON ADMIRALS AND VICE ADMIRALS IN THE NAVY.

[By Paymaster General T. J. Cowie, U. S. Navy.]

It is reported that the Naval Committees of the Congress do not favor the enactment of a law creating and establishing permanently the grades of admiral and vice admiral in the Navy, but that they are prepared to recommend the passage of a measure which will allow the temporary commissioning of rear admirals in these higher ranks while—and only while—they are actually serving on sea duty in command of fleets or squadrons.

This rumored attitude on the part of the naval committees regarding a question of such vital moment is the source of much apprehensive worry to Government officials, naval officers, and other persons familiar with international affairs, who, in their well-founded knowledge, very keenly appreciate the necessity which demands the creation of permanent higher flag rank in the American Navy, and which has been so convincingly and strikingly urged upon the Congress. A law that would grant only temporary commissions as admirals and vice admirals would, at best, prove hardly more than a halfway measure, and would almost entirely fail to bring about just those national benefits and advantages of position the obtaining of which constitutes the main motive of the recommendation. This for the reason that supreme command, in concerted international activities, depends not only upon relative grade standings regarded separately, but also upon the seniority of commissions within a grade. An American admiral or vice admiral whose temporary sea-service commission would necessarily be of recent date would just as truly be subordinate to and under the command of a foreign admiral or vice admiral whose commission was of prior issuance as if he bore only the rank and title of rear admiral. And, as has been so clearly pointed out on several occasions before the committees, it is exactly and precisely the avoidance of this handicap of inevitably inferior rank in combined international movements that is most to be desired. The perpetual relegation of American commanders to inferior phases of joint duties under foreign leadership is something that is neither

profitable in practice nor pleasant to think upon. National interests and national pride both suffer. More is at stake than the requisite reward of individual officers.

Foreign admirals and vice admirals bear permanent commissions in their respective grades, whether afloat or ashore. The result is that when they are assigned to sea duty they enjoy, in the exercise of their public authority, those universally acknowledged and substantial advantages that inhere in commissions of long standing, and their countries reap the benefits that usually come from the dominating influence wielded by representatives whose seniority in rank makes it possible. It would be difficult to imagine a case where an American admiral or vice admiral, bearing a temporary and cruise-limit commission, would be senior to and therefore in command of a foreign officer of like grade standing. It is safe to assume that no foreign nations would be so blind to their own interests as to order to duty in joint operations an admiral or vice admiral junior to the American commander. This would hardly be possible at any rate, since their supreme flag officers would, in the ordinary course of events, not be of recent creation; but even if such was the case in a few instances of new entries to the grades, certain it is that only officers of senior commissions would be picked for the duty, whereas under any scheme of temporary commissions only no American officer of long-grade standing would be available or, for that matter, sad to relate, even in existence. American commanders would continue what they have been doing for a long while and what they are now doing, viz, bringing up the rear, and this in more than one sense of the phrase. The only national advantage that would accrue would be the sentimental one that attaches to the dignity of higher rank and title. The practicable advantage to the nation of that higher rank and title would be lost. This fact should not escape most careful attention. It merits great weight in the deliberations of the members of the Naval Committee, whose judgment in the matter will undoubtedly determine the fate of Secretary Daniels's wise recommendation.

It is estimated that the increase of pay involved in the creation of permanent grades of admiral and vice admiral would not add one-tenth of one-tenth of 1 penny to the per capita cost of running the Government. The possible saving that might be effected through the issuance of temporary instead of permanent commissions in these grades would surely not begin to approximate even a tenth of this infinitesimally small amount. It is difficult to conceive that the Congress can deny for any well-based economic reason legislation the need of which is so palpably apparent. It is beyond reason to think that a financial consideration of so minute a nature would operate to defeat the proposal.

Admiral COWIE. I have a few other items.

EMPLOYMENT OF RETIRED OFFICERS BY CONTRACTORS.

It is also recommended that there be included in the pending naval appropriation bill a provision repealing the clause in the naval act approved June 10, 1896, which makes unlawful the employment of any officer in the Navy or Marine Corps, on the active or retired list, by any person or company furnishing naval supplies or war material to the Government.

This section is as follows:

"That hereafter no payment shall be made from appropriations made by Congress to any officer in the Navy or Marine Corps on the active or retired list while such officer is employed, after June thirtieth, eighteen hundred and ninety-seven, by any person or company furnishing naval supplies or war material to the Government, and such employment is hereby made unlawful after said date."

As pointed out in the annual reports of this bureau and of the Secretary of the Navy, the interests of the Government have been very often inconvenienced and not infrequently injured by the operation of this law. It would certainly be an advantage to the country for retired officers skilled in technical matters pertaining to the Navy to be employed by private firms, and such employment is permitted in foreign countries. Furthermore, there is no such restriction imposed upon officers of the Army.

It is believed that the repeal of the act above referred to would be to the advantage of all parties at interest, namely, the efficiency of the Navy, the efficiency of contractors and their product, and the officers interested.

Officers who have spent their entire lives in studying ordnance and armament, both as to its construction and use on board ship, are more qualified to make improvements than anyone else of equal mental caliber. The employees of contractors have the structural experience but not the experience of operation which these officers have in addition. To handicap the service by a refusal to the contractors of the

employment of these officers who are specially skilled in the practical use of materials is to deprive the Government of improvements which would be of material benefit.

The employment of officers in the works of contractors is of very great advantage to officers so employed, in that they become familiar with the details of construction and thoroughly conversant with new inventions. This employment is therefore to the advantage of the service from the officer's viewpoint.

Officers of the Navy are compulsorily retired for many reasons. Most of these are incident to the service which they have performed in the Navy. Their experience in the service fits them to seek employment with manufacturing concerns, the products of which they have used while in the service. As a matter of fact, their education qualifies them for practically no other employment. To prohibit this employment works an injustice upon such officers and deprives them of the opportunity of pursuing the work which their lives have been cast with, as well as the contractor of the expert advice and assistance which would come to him and the Government thereby.

The Bureau of Supplies and Accounts has for several years recommended the repeal of this act, as has also the Secretary of the Navy. The annual reports of each of these officers for the fiscal year 1912 contain paragraphs recommending this legislation. It is understood that it was acted upon favorably by the Senate Naval Committee last year, and it is earnestly recommended that the same legislation be urged at this session of Congress at the hands of the naval committees of both the House and Senate.

The CHAIRMAN. Put those in your hearings and if anything develops we can have you back later.

The committee will now stand adjourned until next Monday morning at 10.30 o'clock.

(Whereupon, at 12.55 p. m., the committee adjourned to meet next Monday, Dec. 15, 1913, at 10.30 o'clock a. m.)

APPENDIX A.—Comparative statement of pay of the Navy.

	1913	1914	1915
Pay officers on the active list.....	\$9,642,712.78	\$10,770,792.00	\$10,558,644.00
Pay of midshipmen.....	454,254.36	540,000.00	540,000.00
Pay of Nurse Corps.....	107,505.83	89,520.00	116,580.00
Pay of enlisted men.....	21,110,709.81	22,965,579.00	23,562,440.00
Commutation of quarters for officers.....	504,361.57	440,578.00	500,000.00
Commutation of quarters for nurses.....	15,507.52	15,920.00	15,120.00
Allowances for heat and light.....	210,067.60	151,882.00	225,000.00
Honorable discharge gratuities.....	970,313.70	650,969.00	964,812.00
Interests on deposits.....	27,090.77	34,568.00	34,568.00
Death gratuities.....	49,619.65	75,000.00	75,000.00
Total, active list.....	33,092,133.59	35,734,806.00	36,592,164.00
Retired:			
Pay to officers.....	2,940,000.50	3,189,761.00	3,099,433.00
Pay to enlisted men.....	299,864.06	340,085.00	359,127.00
	36,331,997.85	39,264,652.00	40,050,724.00

**SUPPLEMENTAL STATEMENT OF PAYMASTER GEN. T. J.
COWIE, UNITED STATES NAVY.**

**COMMITTEE ON NAVAL AFFAIRS,
December 12, 1913.**

The CHAIRMAN. Admiral Cowie, please give the allowance of the components of the Navy ration, the general conditions governing the purchase of the different component articles, and the reasons for the difference in cost, if any, between the articles comprising the Army and Navy ration.

Admiral COWIE. The Navy ration, as prescribed in sections 1580 and 1581 of the Revised Statutes, as amended by the act of March 2, 1907, is as follows:

			Allowance.
Bread:			
Biscuit or crackers.....	pound..	1	} One of each daily.
Fresh.....	do....	1½	
Flour.....	do....	1½	
Meats:			
Preserved.....	pound..	1	} One of each daily.
Fresh.....	do....	1½	
Salt and smoked.....	do....	1½	
Eggs.....		8	
Vegetables:			
Dried.....	gills..	3	} One of each daily.
Canned.....	pound..	½	
Fresh.....	do....	1½	
Desiccated.....	do....	½	
Rice and cereals.....	do....	½	
Flour (not as bread).....	do....	½	
Fruits:			
Dried.....	pound..	⅙	} One of each daily, when fresh vegeta- bles are not issued.
Canned and preserved.....	do....	⅙	
Fresh.....	do....	⅙	
Beverages:			
Cocoa.....	pound..	½	} One of each daily.
Coffee.....	do....	½	
Tea.....	do....	⅓	
Milk:			
Evaporated.....	pound..	⅙	} One of each daily.
Fresh.....	quart..	⅙	
Butter.....	pound..	½	} Daily.
Sugar.....	do....	½	
Pickles.....	do....	½	
Vinegar.....	pint..	½	} Weekly.
Cheese.....	pound..	½	
Macaroni.....	do....	½	
Mustard.....	do....	⅓	
Pepper.....	do....	⅓	
Salt.....	do....	½	
Sirup.....	pint..	½	
Spices.....	pound..	⅙	
Tomatoes (canned).....	do....	½	
Yeast and flavoring extracts, as needed.			
Lard (or suitable substitute), 7 pounds for every 100 pounds of flour issued as bread.			
"Combined ration" articles, as miscellaneous, by value.			

An extra allowance of 1 ounce of coffee or cocoa, 2 ounces of sugar, 4 ounces of hard bread or its equivalent, and 4 ounces of preserved meat or its equivalent, will be allowed to enlisted men of the engineer and dynamo force who stand night watches between 8 o'clock p. m. and 8 o'clock a. m. under steam.

Any article comprised in the Navy ration may be issued in excess of the authorized quantity, provided there be an underissue of the same value in some other article or articles.

With regard to the general conditions governing the supply of the components of the ration, the exigencies of the naval service require that purchases in large quantities be made considerably in advance of the dates of their actual consumption, and in order to reduce to a minimum the losses through broken packages due to the frequent and unusual handling in shipments to vessels and naval stations, and the loss from deterioration due to the lapse of time between the dates of receipt and consumption, it is absolutely necessary to require that the major portion of the articles of the Navy ration be delivered in exceptionally substantial and somewhat expensive packages, as well as to exact, with respect to quality, a 6 or 12 months' guaranty.

In making a comparison of the cost between the Army and Navy rations, it must be remembered that the conditions just mentioned do not generally obtain in making purchases of articles of the Army ration, since at a great majority of the Army posts, as well as those of the Marine Corps, supplies are purchased locally in such quantities only as are required for immediate consumption, thereby necessitating only the most inexpensive and fragile containers. The questions of containers and guaranty for a specified period of time materially increase the cost of the articles of the Navy ration, but it is considered that economy ultimately results therefrom, since considerable losses to the Government would result in shipments to various ports and particularly to such naval stations and vessels as are located in tropical climates, where military requirements make storage a vital factor.

In order to permit proper dietetic varieties of the Navy ration, all substitute articles are furnished by the Government, there being no payments to the messes for the purchase of substitute articles, as is the case in the Army, where increments to the regular ration are received from monthly payments to each company mess of its share of the profits from the post exchange.

Recently an investigation was made of the prices paid at various ports of the United States by the Navy and Marine Corps (which is subsisted on the Army ration) for the different component articles of the ration common to both services, and it was ascertained that, notwithstanding the obligatory requirements as to containers and the superior quality of the Navy ration (the necessary sequel to a time guaranty), the prices paid by the Navy compare most favorably with those paid by the Marine Corps. The question as to whether there exists any marked difference in the prices paid by the Army and Navy for certain articles of the ration is not, in my opinion, the main essential the prime consideration being the method of

delivery and the standard of quality required by the exigencies of each branch of the service. Other elements to be considered in connection with the difference in cost between the articles of the rations of the different services are the number of articles comprising each ration, the quantity allowed of each article, and the basis upon which the net cost is figured.

The different articles of the Navy ration and the allowance of each article are, as I have hereinbefore stated, fixed by Congress (secs. 1580 and 1851, Rev. Stat., as amended by act of Mar. 2, 1907, 34 Stat., 1193), and the value of the ration is neither fixed nor limited by law or regulation, except in the case of small vessels without a pay officer, such as torpedo boats, destroyers, gunboats, etc., where the cost of the ration is limited by Navy Regulations and varies with the complement of the vessel and the latitude in which it operates. The cost of the Army ration, as well as that of the Marine Corps, is ascertained from certain fixed base components, considered in definite quantities, that are a part of the ration. These stipulated base components and the allowance of each are fixed by the President, and the extent to which other articles allowed as substitutes for each of these base components may be issued is governed by the local contract price of the unit of each base component. The component articles of the Army ration and the allowance of each component article are as follows:

Garrison ration.

Component article.	Quantity.	Component article.	Quantity.
Beef, fresh.....	20 ounces..	Vinegar.....	gill.. 0.16
Flour.....	18 do.....	Salt.....	ounce.. .64
Baking powder.....	do..... .08	Pepper, black.....	do..... .04
Beans.....	do..... 2.4	Cinnamon.....	do..... .014
Potatoes.....	do..... 20	Lard.....	do..... .64
Prunes.....	do..... 1.28	Butter.....	do..... .5
Coffee, roasted and ground.....	do..... 1.12	Sirup.....	gill.. .32
Sugar.....	do..... 3.2	Flavoring extract, lemon.....	ounce.. .014
Milk, evaporated, unsweetened.....	do..... .5		

In view of the difference between the component articles comprising the rations of the two services, and the allowances of each component article, the different requirements regarding delivery, and the time guarantee as to quality, no exact comparison between the cost of the Army and the Navy ration is possible. The nearest approximation to an exact comparison would be to figure out the exact cost of the Army ration at the contract prices obtaining at certain ports for a specified period of time for both services, and in this particular connection I would like to submit, for the consideration of the committee, the following table, which has been prepared with the view of showing the cost of the Marine Corps ration (which is the same as the Army ration) based upon the average prices paid by the Marine Corps at the ports of Boston, New York, Philadelphia, and Norfolk, and the cost of the

same ration figured at the average Navy prices at the same ports for the same period:

Number of rations.	Articles.	In bulk.	Navy.		Marine Corps.	
			Price.	Amount.	Price.	Amount.
70	Beef, fresh.....	87½	0.1233	10.78875	0.1184	10.36
30	Bacon, issue.....	22½	.1748	3.82175	.1590	3.5775
100	Flour, issue.....	112½	.02887	3.24787	.0264	2.8675
100	Baking powder.....	½	.154	.077	.1506	.0753
50	Beans.....	7½	.045	.3375	.0436	.337
50	Rice.....	5	.0459	.2295	.0463	.2315
70	Potatoes, fresh.....	87½	.0139	1.21625	.0162	1.4175
20	Onions, fresh.....	25	.0168	.42	.0217	.5425
10	Tomatoes, canned.....	12½	.0384	.48	.0365	.45625
30	Prunes.....	2½	.0708	.16872	.0658	.22622
50	Jam.....	4	.0792	.3168	.1131	.4524
10	Apples, evaporated.....	½	.0909	.07272	.0806	.06448
10	Peaches, evaporated.....	½	.0767	.06136	.0771	.06168
100	Coffee, R. & G.....	7	.17	1.19	.1781	1.2467
100	Sugar.....	20	.0431	.862	.0442	.884
100	Milk, evaporated.....	3½	.0678	.21188	.0717	.22406
50	Vinegar.....	½	.169	.04225	.1375	.03437
50	Pickles.....	½	.672	.168	.2475	.06188
100	Salt.....	4	.011	.044	.0074	.0296
100	Pepper, black.....	½	.1811	.04538	.1518	.08796
100	Cinnamon.....	.0875	.2807	.02456	.2018	.01706
50	Lard.....	2	.1335	.267	.1205	.241
50	Lard substitute.....	2	.1015	.203	.0944	.1888
50	Butter.....	1.5625	.3031	.47359	.3212	.50188
50	Oleomargarine.....	1.5625	.1418	.22156	.1418	.23156
100	Sirup.....	1	.3507	.3507	.3558	.3558
100	Flavoring extract, lemon.....	.0875	.1645	.01439	.1775	.01553

Cost of 100 rations, \$25.45653 for Navy, and \$24.71432 for Marine Corps.

Cost of 1 ration, \$0.2545653 for Navy, and \$0.2471432 for Marine Corps.

I am informed that the average cost of the Marine Corps ration is approximately the same as the Army, which condition should naturally obtain, since the component articles of the ration and the allowance of each component article are the same for both services and purchases are made upon identical specifications, in a similar manner, in practically the same locality.

To summarize briefly, the main reasons for the difference in the average cost between the Navy and Army, or Marine Corps, ration are as follows:

The requirement by the Navy for more substantial and expensive containers as a protection against damage through shipment and deterioration incident to storage.

The requirement by the Navy for a time guarantee for certain articles, thereby necessitating a superior quality.

The money value prescribed by the Navy Regulations for the cost of the ration upon torpedo boats and other vessels not carrying pay officers, the sum of 45 cents being allowed each man per day upon such vessels as have a complement of 35 or less and 40 cents per man per day upon vessels having a complement of over 35 men.

The increased number of articles comprising the Navy ration and the difference in the allowance of each article, both of which are essential by reason of the periodical absences of vessels from the base of supplies, the difficulties attending the proper preparation and service of the food, and the necessity for a proper variety.

The CHAIRMAN. Admiral, how does the ration of the United States Navy compare with the ration of foreign navies, especially in its nutritive value?

Admiral COWIE. The ration of the United States Navy is far more liberal than the ration of the navy of any foreign power, and the contentment of the enlisted personnel of our Navy can in a large degree be attributed to its quality, acceptability, and service. With regard to the nutritive value of the Navy ration as compared with the ration of foreign navies, I would like to quote the following extract from a report in this connection made in 1911 by Medical Director J. D. Gatewood, United States Navy:

It is difficult to compare the United States Navy ration with the navy ration of other countries except in more or less general terms, as often the information is not available or is not sufficiently explicit. The amounts of nutrients in a ration as *issued* can not be considered as all available because they are not all ingested, the question of waste being of much importance and probably varying with methods of different nations. Besides, a people obtaining much of its starch from rice will probably have a smaller percentage of waste in preparing food than one that obtains much of its starch from the potato, and calculations based upon average percentage of fat in fresh beef are subject to wider variations than those based upon olive oil or even other vegetable sources.

In general terms, the United States Navy ration seems to greatly exceed the ration of any other navy. The nutritive ration in foreign navies is generally much narrower and in not a few there is the expedient, doubtful from a work point of view, of obtaining carbon to some extent from alcohol, even by additional allowance to the engineer force. At any rate, that forms in many cases a characteristic difference in comparing the ration of our service with others.

However, the following may be considered under the limitations indicated:

Naval dietaries.	Eaten.			Digestible.			Utilizable fuel value.	Nutritive ratio 1 to —
	Protein.	Fat.	Carbohydrates.	Protein.	Fat.	Carbohydrates.		
	Gm.	Gm.	Gm.	Gm.	Gm.	Gm.	Cals.	
1. U. S. Navy (see ration).....	138	269	556	127	256	540	5,180	8.7
2. U. S. Navy (fresh provisions).....	145	135	444	134	129	431	3,563	5.3
3. U. S. Navy (usual).....	142	192	492	131	183	478	4,256	6.7
4. U. S. Navy (engineer force).....	182	218	624	168	207	606	5,174	6.3
5. Japanese Navy (average).....	126	56	607	116	53	589	3,430	6.1
6. French Navy (average).....	170	34	524	156	32	508	3,078	3.7
7. French Navy (engineer force).....	184	35	608	169	33	590	3,407	3.9
8. British Navy (average).....	127	110	601	117	104	583	3,891	7.2
9. British Navy (engineer force).....	175	149	728	161	141	706	4,938	6.6

The figures in the above table relating to the French Navy should be accepted with not a little reservation, as in the data obtainable it is not clear that all necessary factors have been included or that any allowance for waste is made. It is probably the ration as *issued* and not as *consumed*. In regard to the Japanese Navy, it may be noted that the average weight of the enlisted man seems to be about 129 pounds. The figures relating to the British Navy result from calculations based upon information previously given.

In regard to the nutritive value of flour issued in our Navy it may be stated that it is now required to contain not less than 11 per cent of gluten, to show not more than 13 per cent of water, and to give not more than one-half of 1 per cent ash. The following may be taken as the average composition of flour obtained under the new specifications: Water, 12 per cent; protein, 11.4 per cent; fats, 1 per cent; carbohydrates, 75 per cent; ash, 0.5 per cent.

Attention is also invited to the very valuable degree of elasticity provided for the ration of our Navy. That feature depends upon the following law, which is regarded as representing one of the great advances of modern times in relation to the food of the Navy: "Any article comprised in the Navy ration may be issued in excess of the authorized quantity, provided there be an underissue of the same value in some other article or articles."

In view of the very large variety of foodstuffs allowed under the wording of the United States Navy ration and purchased, the elasticity provided enables the service to make issues to accord with consumption in any given case, thus making very much allowance for the tastes of the men themselves, greatly increasing the acceptability of the ration as a whole.

VI

The CHAIRMAN. Admiral, have you any specimen bills of fare showing the component articles of the ration issued to the naval service?

Admiral COWIE. I have with me specimen bills of fare from the naval training station, Newport, R. I., and from four of the battle-ships of the Atlantic Fleet, which I think represent the average daily ration issued to enlisted men of the Navy at shore stations and on board the different vessels.

U. S. S. "UTAH," BILL OF FARE, GENERAL MESS, WEEK BEGINNING NOVEMBER 24, 1913.

MONDAY.

Breakfast.—Fried eggs, steamed hash, bread, butter, coffee.

Dinner.—Rice soup, boiled mutton, caper sauce, boiled peeled potatoes, lima beans, ginger cake, bread, coffee.

Supper.—Hamburger steak, onion gravy, boiled potatoes, cornstarch pudding, bread, butter, tea.

TUESDAY.

Breakfast.—Fried pork chops, gravy, boiled potatoes, bread, butter, coffee.

Dinner.—Vegetable soup, pot roast of beef, brown gravy, mashed potatoes, stewed onions, bread, coffee.

Supper.—Minced beef on toast, French fried potatoes, chocolate pudding, bread, butter, tea.

WEDNESDAY.

Breakfast.—Baked beans, catsup, hot corn bread, bread, butter, coffee.

Dinner.—Pea soup (crackers), beef cutlets, onion gravy, succotaah, boiled peeled potatoes, bread, coffee.

Supper.—Cold sliced corned beef, cold beans, potato salad, French pancakes, bread, butter, tea.

THURSDAY.

Breakfast.—Fresh beef stew, dumplings, bread, butter, coffee.

Dinner.—Chicken soup, fried chicken and dressing, giblet gravy, cranberry sauce, asparagus on toast, green peas, creamed potatoes, grapes, mince pie, fruit cake, assorted nuts, cocoa, cigars.

Supper.—Cold meat, cheese, fried potatoes, tapioca pudding, bread, jam, tea.

FRIDAY.

Breakfast.—Tomato omelette, boiled hominy, milk and sugar, bread, butter, coffee.

Dinner.—Bean soup, baked salmon, Hollandaise sauce, mashed potatoes, vegetable salad, bread, coffee.

Supper.—Fried pork chops, gravy, boiled potatoes, bread, butter, tea.

SATURDAY.

Breakfast.—Chipped beef with onions and tomatoes, boiled peeled potatoes, hot biscuits, bread, butter, coffee.

Dinner.—Dehydro potato soup, roast beef, gravy, stewed carrots, boiled potatoes, bread, coffee.

Supper.—Hamburger loaf, onion gravy, lyonnaise potatoes, bread, butter, tea.

SUNDAY.

Breakfast.—Baked beans, catsup, coffee cake, bread, butter, coffee.

Dinner.—Breaded pork chops, tomato sauce, spinach, mashed potatoes, raisin cake, bread, coffee.

Supper.—Steamed Frankfurters, potato salad, cold beans, bread, jam, tea.

Respectfully submitted.

H. PHILIPP.

Chief Commissary Steward, United States Navy.

Approved:

C. J. PEOPLES,

Paymaster United States Navy.

VII

U. S. S. "UTAH" BILL OF FARE, GENERAL MESS, WEEK BEGINNING DECEMBER 2, 1913.

MONDAY.

Breakfast.—Baked hash, hot cakes, sirup, bread, butter, coffee.

Dinner.—Vegetable soup, roast beef, brown gravy, stewed carrots, boiled peeled potatoes, bread, coffee.

Supper.—Beef ragout, steamed rice, clam fritters, bread, jam, tea.

TUESDAY.

Breakfast.—Tinned meat omelette, corn flakes, milk and sugar, bread, butter, coffee.

Dinner.—Fried pork chops, gravy, mashed potatoes, lima beans, jam layer cake, bread, coffee.

Supper.—Salmon croquettes, white sauce, baked macaroni and cheese, bread, butter, tea.

WEDNESDAY.

Breakfast.—Baked beans, catsup, hot corn bread, bread, butter, coffee.

Dinner.—Dehydro potato soup, braised beef, gravy, mashed potatoes, vegetable salad, stewed peaches, bread, coffee.

Supper.—Cold meats, cold beans, hash brown potatoes, chocolate pudding, bread, butter, tea.

THURSDAY.

Breakfast.—Baked pork sausage, onion gravy, boiled peeled potatoes, bread, butter, coffee.

Dinner.—Rice soup, fried hamburger steak, onions, mashed potatoes, spinach, ginger cake, bread, coffee.

Supper.—Fried pork chops, gravy, potato salad, tapioca fruit pudding, bread, butter, tea.

FRIDAY.

Breakfast.—Egg omelette, boiled hominy, sugar and milk, bread, butter, coffee.

Dinner.—Bean soup (crackers), beef cutlets, onions, succotash, peeled boiled potatoes, bread, coffee.

Supper.—Steamed frankfurters, mustard, mashed potatoes, coleslaw, bread, butter, cocoa.

SATURDAY.

Breakfast.—Fresh beef stew, dumplings, bread, butter, coffee.

Dinner.—Pot roast of beef, brown gravy, boiled potatoes, macaroni, plain cake, bread, coffee.

Supper.—Breaded pork chops, gravy, mashed potatoes, apple sauce, bread, butter, tea.

SUNDAY.

Breakfast.—Baked beans, catsup, coffee cake, bread, butter, coffee.

Dinner.—Giblet soup, chicken fricassee, egg dumplings, potato croquettes, green peas, currant cake, bread, coffee.

Supper.—Cold meats, cold beans, lyonnaise potatoes, bread, butter, tea.

Respectfully submitted.

H. PHILIPP,

Chief Commissary Steward, United States Navy.

Approved:

C. J. PEOPLES,

Paymaster, United States Navy.

VIII

U. S. S. "WYOMING," AT SEA.—GENERAL MESS BILL OF FARE FOR THE WEEK COMMENCING NOVEMBER 2, 1913.

SUNDAY.

Breakfast.—Baked pork and beans, tomato catsup, apples.

Dinner.—Grilled beefsteak, gravy, creamed asparagus, mashed potatoes, cake.

Supper.—Cold corned beef, German fried potatoes, hot beans.

MONDAY.

Breakfast.—Scrambled eggs with fried bacon, hominy with milk and sugar.

Dinner.—Pot roast beef, peeled potatoes, stewed tomatoes.

Supper.—Salmon croquettes with tomato sauce, creamed onions, cheese, suet pudding with lemon sauce.

TUESDAY.

Breakfast.—Fried pork sausage, pancakes with sirup.

Dinner.—Roast pork loin, mashed potatoes, stewed corn, apple sauce.

Supper.—Bologna, potato salad with mayonnaise dressing, corn fritters, coconut pie.

WEDNESDAY.

Breakfast.—Baked pork and beans, tomato catsup, corn bread.

Dinner.—Tomato soup, pot roast beef, mashed potatoes, cottage pudding with lemon sauce.

THURSDAY.

Breakfast.—Corned beef hash, tomato catsup, fried corn-meal mush with sirup.

Dinner.—Fried pork chops, peeled potatoes, stewed corn, apple sauce.

Supper.—Fresh beef pot pie, baked macaroni with cheese, pumpkin pie, jam.

FRIDAY.

Breakfast.—Chipped beef, toast, fried potatoes.

Dinner.—Chicken soup, pot roast beef, baked potatoes, stewed peaches.

Supper.—Frankfurters, fried potatoes, creamed onions, rice custard.

SATURDAY.

Breakfast.—Fresh beef stew, oatmeal with milk, coffee cake.

Dinner.—Boiled ham, peeled potatoes, sauerkraut, bean soup.

Supper.—Hamburger steak, fried onions, baked potatoes, sliced beets, jam.

Respectfully submitted.

C. W. BAKER,
Chief Commissary Steward, United States Navy.

Approved.

C. G. MAYO,
Paymaster, United States Navy, Commissary Officer.

N. B.—Bread, tea, coffee, or cocoa served with each meal.

U. S. S. "WYOMING," VILLEFRANCHE, FRANCE—GENERAL MESS BILL OF FARE FOR THE WEEK COMMENCING NOVEMBER 23, 1913.

SUNDAY.

Breakfast.—Fried bacon and scrambled eggs, oatmeal and milk.

Dinner.—Roast chicken with bread dressing, mashed potatoes, stewed peas, cake.

Supper.—Cold corned beef, French fried potatoes, baked macaroni with cheese, apple butter.

MONDAY.

Breakfast.—Chipped beef, fried potatoes, hominy with milk and sugar.

Dinner.—Pot roast of beef, baked potatoes, stewed tomatoes, tapioca pudding.

Supper.—Salmon croquettes with tomato sauce, creamed onions, suet pudding with lemon sauce.

IX

TUESDAY.

Breakfast.—Corned beef hash, tomato catsup, pancakes with sirup.

Dinner.—Beef potpie, mashed potatoes, creamed asparagus.

Supper.—Sardines, fried potatoes, rice fritters, cocoanut pie.

WEDNESDAY

Breakfast.—Baked pork and beans, tomato catsup, corn bread.

Dinner.—Roast loin of pork, baked potatoes, stewed corn, apple sauce.

Supper.—Cold corned beef, French fried potatoes, hot beans, apple butter.

THURSDAY.

Breakfast.—Fried bacon and scrambled eggs, oatmeal and milk.

Dinner.—Roast chicken with bread dressing, mashed potatoes, stewed peas, cranberry sauce, mince pie.

Supper.—Salmon with onions, potato salad with mayonnaise dressing, corn fritters, cake.

FRIDAY.

Breakfast.—Corned beef hash with tomato catsup, pancakes with sirup.

Dinner.—Tomato soup, oyster crackers, pot roast beef, baked potatoes, string beans.

Supper.—Sardines, fried potatoes, baked macaroni with cheese, ginger bread, jam.

SATURDAY.

Breakfast.—Baked pork and beans, tomato catsup, cornmeal mush with sirup.

Dinner.—Pea soup, boiled ham, peeled potatoes, sauerkraut.

Supper.—Hamburger steak with onions, baked potatoes, sliced beets, pineapple pie.

Respectfully submitted.

C. W. BAKER,

Chief Commissary Steward, United States Navy.

Approved.

C. G. MAYO,

Paymaster, United States Navy, Commissary Officer.

N. B.—Bread, tea, coffee, or cocoa served with each meal.

U. S. S. "NORTH DAKOTA" BILL OF FARE FOR WEEK ENDING SATURDAY, NOVEMBER 15, 1913.

SUNDAY.

Breakfast.—Boston baked beans, breakfast rolls, bread, butter, coffee.

Dinner.—Roast loin of pork, apple sauce, mashed potatoes, lima beans, mince pie, bread, butter, coffee.

Supper.—Cold sliced meats, hot potato salad, rice custard, bread, butter, cocoa.

MONDAY.

Breakfast.—Fried hominy, medium boiled eggs, bread, butter, coffee.

Dinner.—Split-pea soup, pickles, boiled and roast ham, Andalusian sauce (into a rich tomato sauce work some grated ham and minced (fried) onions), peeled Irish potatoes, bread pudding, diplomate sauce, bread, butter, coffee.

Supper.—Smothered liver and bacon, fried potatoes, bread, butter, tea.

TUESDAY.

Breakfast.—Fried pork sausage, flannel cakes (serve warm), sirup, bread, butter, coffee.

Dinner.—Tomatoed hamburger with pork sausage formed into roll, mashed turnips and potatoes, pickled beets, kidney beans, bread, butter, coffee.

Supper.—Clam chowder (Philadelphia style), crackers, bananas, bread, butter, tea.

X

WEDNESDAY.

Breakfast.—Boston baked beans, breakfast rolls, bread, butter, coffee.

Dinner.—Steamed frankfurters, mustard, sauerkraut, mashed potatoes, hot baking powder biscuit (two each), jelly, bread, butter, coffee.

Supper.—Fried beef kidney with bacon on toast, cold beans, bread, butter, tea.

THURSDAY.

Breakfast.—Beefsteak, onion gravy, boiled potatoes, bread, butter, coffee.

Dinner.—Fricassee of mutton, mashed potatoes, creamed carrots, oranges, bread, butter, coffee.

Supper.—Salmon croquettes, tomato sauce, cottage pudding, lemon sauce, bread, butter, tea.

FRIDAY.

Breakfast.—Baked beef hash, tomato catsup, bread, butter, coffee.

Dinner.—Fried weakfish, baked sweet potatoes, lima beans, mince pie, bread, butter, coffee.

Supper.—Creamed chipped beef, banana fritters, fruit sauce, bread, butter, tea.

SATURDAY.

Breakfast.—Omelet with bacon and minced ham, bread, butter, coffee.

Dinner.—Roast beef, pan gravy, rice and tomato soup, potatoes, tinned apricots, bread, butter, coffee.

Supper.—Beef stew with egg dumplings, bread, butter, tea.

Respectfully submitted.

S. W. WOLF,

Chief Commissary Steward, United States Navy.

Approved:

HENRY DE F. MEL,

Paymaster, United States Navy, Commissary.

U. S. S. "ARKANSAS"—MENU FOR SHIP'S COMPANY AND MARINES, WEEK ENDING NOVEMBER 1, 1913.

SUNDAY, OCTOBER 26.

Breakfast.—Baked pork and beans, hot cakes with sirup, bread, butter, and coffee.

Dinner.—Chicken fricassee with dumplings, mashed potatoes, green peas, bread, butter, and cocoa.

Supper.—Bologna, cheese, cold beans, rice pudding, bread, butter, and tea.

MONDAY, OCTOBER 27.

Breakfast.—Dropped egg on hash (baked), oatmeal and milk, bread, butter, and coffee.

Dinner.—Roast beef, gravy, mashed potatoes, lima beans, bread, butter, and cocoa.

Supper.—Fried liver, gravy, fried potatoes, ginger bread, bread, butter, and tea.

TUESDAY, OCTOBER 28.

Breakfast.—Fried eggs, hominy and milk, bread, butter, and coffee.

Dinner.—Pork chops, gravy, mashed potatoes, rice pudding, bread, butter, and coffee.

Supper.—Sea pie, ice cream, layer cake, bread, butter, and tea.

WEDNESDAY, OCTOBER 29.

Breakfast.—Baked pork and beans, fried rolled oats with sirup, bread, butter, and coffee.

Dinner.—Roast veal, sage dressing, mashed potatoes, stewed corn, bread, butter, and cocoa.

Supper.—Frankfurters, mustard, fried potatoes, bread pudding, bread, butter, and tea.

THURSDAY, OCTOBER 30.

Breakfast.—Minced meat on toast, boiled potatoes, bread, butter, and coffee.
Dinner.—Beefsteak, gravy, mashed potatoes, green peas, bread, butter, and cocoa.
Supper.—Cold roast beef, potato salad with mayonnaise dressing, mince pie, bread, butter, and tea.

FRIDAY, OCTOBER 31.

Breakfast.—Fried eggs, oatmeal and milk, bread, butter, and coffee.
Dinner.—Boiled beef, vegetable soup (crotons), pickles, boiled potatoes, bread, butter, and coffee.
Supper.—Hamburger and pork sausage loaf, gravy, boiled potatoes, coffee cake, bread, butter, and tea.

SATURDAY, NOVEMBER 1.

Breakfast.—Beef stew with dumplings, bread, butter, and coffee.
Dinner.—Boiled ham, bean soup (crotons), pickles, boiled potatoes, bread, butter, and coffee.
Supper.—Pork sausage, gravy, fried potatoes, ginger bread, bread, butter, and tea.
 Respectfully submitted.

W. J. VEACH,
Chief Commissary Steward, United States Navy.

Approved and forwarded.

W. H. DOHERTY,
Paymaster, United States Navy.

GENERAL MESS MENU, NAVAL TRAINING STATION, NEWPORT, R. I., FOR THE WEEK
 ENDING OCTOBER 4, 1913.

SUNDAY, SEPTEMBER 28.

Breakfast.—Baked pork and beans, catsup, cinnamon buns, sliced pineapple.
Dinner.—Vegetable soup, roast fresh hams, mashed potatoes, green peas, ice cream, and cake.
Supper.—Pickle pigs' feet, cold beans, potato salad, apple cake.

MONDAY, SEPTEMBER 29.

Breakfast.—Fresh meat hash, German pancakes, Karo sirup, fresh peaches.
Dinner.—Barley soup, pot roast of beef, Spanish sauce, roast potatoes, creamed corn, pineapple pie.
Supper.—Beef a la mode, mashed potatoes, creamed lima beans, assorted cakes.

TUESDAY, SEPTEMBER 30.

Breakfast.—Fried pork chops, brown gravy, lyonnaise potatoes, hot rolls.
Dinner.—Bean soup, boiled corn beef and cabbage, boiled potatoes, mashed turnips, pumpkin pie.
Supper.—Fried luncheon meat, sauté potatoes, kidney beans, cottage pudding, vanilla sauce.

WEDNESDAY, OCTOBER 1.

Breakfast.—Baked pork and beans, catsup, Parker House rolls, tinned cherries.
Dinner.—Vermicelli soup, roast beef, brown gravy, green corn, mashed potatoes, coconut-custard pie.
Supper.—Broiled beefsteak smothered in onions, fried potatoes, jam turnovers.

THURSDAY, OCTOBER 2.

Breakfast.—Fresh beef stew with dumplings, hot rolls, fresh peaches.
Dinner.—Cream of chicken soup, Rhode Island broilers, French fried potatoes, green peas, sliced tomatoes, apple pie.
Supper.—Minced beef on toast, fried potatoes, lima beans, marble cake.

FRIDAY, OCTOBER 3.

Breakfast.—Parsley omelettes, corn flakes, sugar and cream, currant-corn muffins.
Dinner.—Clam chowder, fried flounders, tomato sauce, mashed potatoes, green corn, lemon-meringue pie.
Supper.—Fried pork chops, brown gravy, O'Brien potatoes, rice-custard pudding.

SATURDAY, OCTOBER 4.

Breakfast.—Broiled beefsteak, onion gravy, lyonnaise potatoes.
Dinner.—Noodle soup, roast beef plates, gravy, roast potatoes, mashed turnips, mincemeat pie.
Supper.—Hamburger steak with onions, Spanish kidney beans, fried potatoes, gingerbread.
 Respectfully submitted.

P. DOWNEY,
Chief Commissary Steward, United States Navy.

Approved.

ROBERT S. CHEW, Jr.,
Passed Assistant Paymaster, United States Navy,
Commissary Officer.

GENERAL MESS MENU, NAVAL TRAINING STATION, NEWPORT, R. I., FOR THE WEEK
 ENDING OCTOBER 11, 1913.

SUNDAY, OCTOBER 5.

Breakfast.—Baked pork and beans, catsup, cinnamon rolls, sliced pineapple.
Dinner.—Vermicelli soup, roast fresh hams, gravy, stuffed green peppers, mashed potatoes, ice cream and cake.
Supper.—Pickled pigs' feet, cold beans, potato salad, assorted cakes, jam.

MONDAY, OCTOBER 6.

Breakfast.—Soft-boiled eggs, fresh-meat hash, corn flakes, sugar and cream, hot rolls.
Dinner.—Vegetable soup, pot roast of beef, Spanish sauce, boiled potatoes, creamed corn, pineapple pie.
Supper.—Minced beef on toast, boiled sweet potatoes, pickled beets, cottage pudding, vanilla sauce.

TUESDAY, OCTOBER 7.

Breakfast.—Broiled beefsteak, onion gravy, fried potatoes, Bartlett pears.
Dinner.—Bean soup (croutons), boiled corn beef and cabbage, boiled potatoes, mashed turnips, pumpkin pie.
Supper.—Breaded veal cutlets, tomato sauce, French fried potatoes, green peas, rice custard pudding.

WEDNESDAY, OCTOBER 8.

Breakfast.—Baked pork and beans, catsup, currant buns, tinned cherries.
Dinner.—Noodle soup, roast beef, brown gravy, roast potatoes, green corn, apple pie.
Supper.—Fried pork chops, lyonnaise potatoes, creamed lima beans, assorted cakes.

THURSDAY, OCTOBER 9.

Breakfast.—Fresh beef stew with dumplings, Concord grapes, Parker House rolls.
Dinner.—Chicken soup with rice, chicken a la Maryland, French fried potatoes, green peas, lettuce and tomato salad, lemon meringue pie.
Supper.—Beef a la mode, mashed potatoes, kidney beans, gingerbread.

FRIDAY, OCTOBER 10.

Breakfast.—Onion omelettes, rolled oats, sugar and cream, currant corn muffins.
Dinner.—Clam chowder, fried fish, tomato sauce, mashed potatoes, green corn, lobster salad, coconut custard pie.
Supper.—Broiled beefsteak, onion gravy, fried potatoes, jam turnovers.

XIII

SATURDAY, OCTOBER 11.

Breakfast.—Fried pork chops, onion gravy, lyonnaise potatoes, hot rolls.
Dinner.—Barley soup, roast beef, gravy, candied sweet potatoes, creamed corn, mincemeat pie.
Supper.—Fried luncheon meat, O'Brien potatoes, Spanish kidney beans, marble cake.
Respectfully submitted.

P. DOWNEY,
Chief Commissary Steward, United States Navy.

Approved.

ROBERT S. CHEW, Jr.,
Passed Assistant Paymaster, United States Navy,
Commissary Officer.

GENERAL MESS MENU, NAVAL TRAINING STATION, NEWPORT, R. I., FOR THE WEEK ENDING OCTOBER 18, 1913.

SUNDAY, OCTOBER 12.

Breakfast.—Baked pork and beans, catsup, cinnamon rolls, fresh peaches.
Dinner.—Rice and tomato soup, roast fresh hams, apple sauce, mashed potatoes, stuffed green peppers, ice cream, and cake.
Supper.—Cold roast beef, German mustard, cold baked beans, potato salad, jam.

MONDAY, OCTOBER 13.

Breakfast.—Parsley omeletts, corn flakes, sugar and cream, currant rolls, sliced pineapple.
Dinner.—Vegetable soup, pot roast of beef, Spanish sauce, roast potatoes, creamed corn, pineapple pie.
Supper.—Broiled beefsteak, onion gravy, French-fried potatoes, kidney beans, assorted cakes.

TUESDAY, OCTOBER 14.

Breakfast.—Fried pork chops, onion gravy, sauté potatoes, hot rolls, tinned cherries.
Dinner.—Bean soup, boiled spareribs, spinach, broiled potatoes, mashed turnips, pumpkin pie.
Supper.—Fried luncheon meat, O'Brien potatoes, cream lima beans, cottage pudding, vanilla sauce.

WEDNESDAY, OCTOBER 15.

Breakfast.—Baked pork and beans, catsup, Parker House rolls, Bartlett pears.
Dinner.—Vermicelli soup, roast beef, gravy, candied sweet potatoes, stuffed green peppers, coconut custard pie.
Supper.—Minced meat on toast, fried potatoes, pickled beets, gingerbread.

THURSDAY, OCTOBER 16.

Breakfast.—Fresh beef stew with dumplings, currant-corn muffins, Concord grapes.
Dinner.—Cream of potato soup, chicken fricassee, mashed potatoes, green corn, lemon meringue pie.
Supper.—Beef à la mode, Spanish kidney beans, sauté potatoes, rice pudding.

FRIDAY, OCTOBER 17.

Breakfast.—Soft-boiled eggs, fresh meat hash, rolled oats, sugar, and milk.
Dinner.—Clam chowder, fried flounders, tomato sauce, baked potatoes, sliced tomatoes, apple pie.
Supper.—Breaded veal cutlets, tomato sauce, fried potatoes, green peas, tapioca pudding.

SATURDAY, OCTOBER 18.

Breakfast.—Broiled beefsteak, onion gravy, lyonnaise potatoes, fresh peaches.
Dinner.—Noodle soup, roast beef, brown gravy, boiled potatoes, mashed turnips, mixed pickles, mincemeat pie.
Supper.—Beef croquettes, cream lima beans, sauté potatoes, bread pudding, cream sauce.
Respectfully submitted.

P. DOWNEY,
Chief Commissary Steward, United States Navy.

Approved.

W. N. HUGHES,
Passed Assistant Paymaster, United States Navy, Commissary Officer.

XIV

Analysis of totals for all pay and allowances, officers and enlisted men, fiscal year ending June 30, 1913.

Appropriation.....		\$37, 280, 971. 25	
Less—			
Unallotted balance, June 30, 1913.....	\$925, 349. 26		
Unliquidated encumbrances, June 30, 1913.....	23, 624. 14		
		948, 973. 40	
Expenditures to be accounted for.....		36, 331, 997. 85	
Expenditures:			
Shore stations, active list—			
Pay—			
Officers.....	\$4, 991, 759. 69		
Nurses.....	107, 505. 83		
Enlisted men.....	885, 668. 78		
		5, 984, 934. 30	
Commutation of quarters—			
Officers.....	504, 361. 57		
Nurses.....	15, 507. 52		
		519, 869. 09	
Heat and light, officers.....		210, 067. 60	
Honorable discharge gratuities.....		42, 718. 72	
Interest on deposits.....		414. 67	
Sales D. M. and D. effects.....		845. 24	
		6, 758, 849. 62	
Retired—			
Pay—			
Officers.....	2, 940, 000. 50		
Enlisted men.....	299, 864. 06		
		3, 239, 864. 56	
Miscellaneous—			
Death gratuities.....	27, 865. 65		
Auditor's claims.....	20, 908. 76		
		48, 774. 41	
		3, 288, 638. 97	
On ships, active list—			
Pay—			
Officers.....	5, 105, 207. 45		
Enlisted men.....	20, 382, 692. 01		
		25, 488, 899. 46	
Miscellaneous—			
Honorable discharge gratuities.....	927, 594. 68		
Interest on deposits.....	26, 666. 10		
Miscellaneous.....	28, 389. 28		
		982, 650. 06	
		26, 471, 549. 52	
Total.....		36, 519, 038. 11	
Less credits, checkages on rolls—			
Fuel and water (shore).....	2, 738. 91		
Absences (shore).....	3, 752. 67		
Miscellaneous (shore).....	21, 828. 01		
Miscellaneous (ships).....	158, 720. 67		
		187, 040. 26	
Net expenditures.....		36, 331, 997. 85	

XV

Analysis of pay and allowances for all officers and enlisted men for the fiscal year ending June 30, 1913, by activities.

Officers, midshipmen, and nurses:

Shore duty—

In navy yards—

Industrial... \$962,717.54

Military..... 1,985,405.20

Mixed..... 502,505.89

\$3,450,628.63

Inspection..... 326,802.88

Recruiting..... 221,583.53

Navy Depart-

ment..... 611,388.46

Boards..... 180,171.39

Instruction..... 143,339.22

Miscellaneous.... 444,895.55

1,928,181.03

Total officers, etc..... \$5,378,809.66

Enlisted men, shore duty..... 885,668.78

Total shore duty..... \$6,264,478.44

Sea duty:

Officers and midshipmen..... 5,105,207.45

Enlisted men..... 20,383,692.01

Total sea duty..... 25,488,899.46

Title H, personnel unassigned:

Leave and waiting orders—

Officers..... \$493,245.46

Enlisted men..... 164,033.85

657,279.31

Retired—

Officers..... 2,940,000.50

Enlisted men..... 299,864.06

3,239,864.56

Total personnel unassigned..... 3,897,143.87

Miscellaneous:

Honorable discharge gratuities, death gratuities,

interest on deposits, etc..... 868,516.34

Less miscellaneous credits..... 187,040.26

Total miscellaneous..... 681,476.08

Grand total..... \$36,331,997.85

XVI

Detailed analysis of expenditures at the navy yard, Washington, D. C., during the fiscal year ending June 30, 1913, on account of pay and allowances of officers and enlisted men on duty in the Navy Department and miscellaneous duty.

Navy Department:

Office of the Secretary of the Navy—

Aid for operations	\$14, 286. 80
Aid for personnel	5, 793. 74
Aid for material	7, 635. 53
Aid for inspections	6, 666. 33
Director of navy yards	4, 992. 27

\$39, 374. 67

Office of the Admiral of the Navy

3, 076. 00

Office of Naval Intelligence

33, 908. 88

Bureau of Navigation

77, 665. 24

Hydrographic Office

14, 753. 91

Naval Observatory

34, 902. 74

127, 321. 89

Bureau of Yards and Docks

24, 564. 84

Bureau of Ordnance

55, 286. 80

Bureau of Construction and Repair

46, 715. 59

Bureau of Steam Engineering

82, 876. 12

Bureau of Supplies and Accounts

61, 803. 40

Bureau of Medicine and Surgery

54, 602. 73

Office of Judge Advocate General

22, 952. 62

Special duty

58, 802. 25

Total Navy Department

\$611, 285. 79

Miscellaneous:

Aviation duty

1, 324. 80

Inspection of materials

14, 221. 49

Boards—

General Board

59, 101. 52

Board of Inspection and Survey

48, 388. 70

Examining and retiring boards

51, 064. 45

Special Ordnance Board

10, 314. 00

168, 868. 67

Naval dispensary

6, 624. 23

Instruction duty

47, 451. 48

Panama Canal duty

6, 975. 00

Radio service

12, 916. 41

Miscellaneous duty—

Disbursing account vouchers

6, 008. 00

General Inspector of Pay Corps

8, 680. 56

Public works officer

6, 008. 00

Special duty Naval Reserves

4, 405. 87

Allotment office

6, 008. 00

Target practice and engineering com-

petition

3, 143. 96

Marine Barracks duty

4, 620. 00

Department of Justice

7, 650. 97

Naval Academy

42. 78

Naval proving ground

1, 049. 30

Norfolk yard

177. 78

Naval Home, Philadelphia

29. 80

New Orleans Station

930. 28

Alaska coal investigation

1, 027. 20

Conference, Paris and London

119. 76

Steam whaler *Diana*

37. 17

49, 939. 43

Heat and light for special duty officers in Washington ..

48, 531. 36

Lighthouse duty

730. 10

Recruiting duty

37, 324. 54

Settling accounts

894. 00

Traveling under orders

7, 435. 67

Total miscellaneous

403, 237. 18

Grand total

1, 014, 522. 97

XVII

Statement showing expenditures for pay and allowances of officers, enlisted men, etc., paid at navy yards, naval stations, etc., Titles H and I, fiscal year ending June 30, 1913.

Station.	Title H.		Title I.	Total.
	Leave and waiting orders.	Retired.		
Portsmouth, N. H.	\$5,591.74	\$54,102.05	\$11,148.32	\$70,842.11
Boston, Mass.	22,699.83	286,149.44	98,984.98	407,834.25
Training Station, Newport, R. I.	10,766.13	44,200.66	6,804.61	61,771.40
Torpedo Station, Newport, R. I.	528.63	11,634.36	7,857.72	20,020.71
War College, Newport, R. I.			63,117.53	63,117.53
New York, N. Y.	33,626.00	665,207.59	143,647.79	872,481.38
Philadelphia, Pa.	10,703.73	139,619.77	162,617.96	312,941.46
Naval Home, Philadelphia, Pa.	3,372.26	409,728.40	503.01	413,603.67
Baltimore, Md.	769.49	136,808.23	19,571.13	157,148.85
Naval Academy, Annapolis, Md.	10,589.96	101,745.05	3,617.66	115,952.67
Washington, D. C.	57,979.73			
	1,730.92	961,021.88	1,014,522.97	2,035,255.50
Proving ground, Indian Head	799.63		36.72	836.35
Norfolk, Va.	13,410.19	101,469.45	55,758.57	170,638.21
Charleston, S. C.	3,762.26	4,547.16	7,236.23	15,545.65
Port Royal, S. C.	321.78			
	103,297.55		2,575.26	106,194.59
Key West, Fla.	3,662.76	1,189.99		4,852.75
Guantanamo, Cuba.	553.39		52.00	605.39
Training Station, North Chicago	2,777.05	6,704.34	56,839.72	66,321.11
Las Animas, Colo.	10,026.71	9,725.68	11,095.16	30,847.55
	54,433.87			
Mare Island, Cal.	20,460.21	173,285.31	17,814.33	211,559.85
Training Station, Cal.	3,041.49	81,185.58	40,547.71	124,774.78
Seattle, Wash.	1,095.83		9,822.67	10,918.50
Puget Sound, Wash.	2,167.91	20,885.12	7,808.50	30,861.53
Pearl Harbor, Hawaii.	477.70	654.50	2,079.77	3,211.97
Guam, M.	1,342.81			1,342.81
Cavite, P. I.			2,889.46	2,889.46
Olongapo, P. I.	318.33			
	4,571.51		5,080.80	9,970.64
Tutuila, Samoa.	145.44		1,281.02	1,426.46
Yokohama, Japan.	1,770.61		211.50	1,982.11
Naval attachés, etc.			70,119.08	70,119.08
Summaries of ships' rolls.	271,235.16		104,540.85	375,776.01
Aggregate	658,030.61	3,239,864.56	1,928,181.03	5,826,076.20
Officers	493,996.76	2,941,190.49		
Enlisted men	164,033.85	298,674.07		
	658,030.61	3,239,864.56		

¹ These amounts represent payments to enlisted men on account of prisoners and sick in hospital.

XVIII

Analysis of expenditures under Title I, special duty, during the fiscal year ending June 30, 1913.

Aviation expenditures.....	\$2, 732. 19
Boards on changes.....	11, 181. 74
Boards, examining.....	120. 98
Fitting out ships.....	949. 70
Government landing, Newport.....	2, 909. 51
Harbor supervision.....	9, 707. 73
Hydrographic duty.....	21, 428. 50
Heat and light.....	79, 566. 19
Inspection of material and construction.....	326, 802. 88
Inspection of shore stations.....	218. 53
Instruction duty.....	143, 339. 22
Lighthouse duty.....	2, 317. 03
Miscellaneous.....	146, 634. 25
Naval attachés, fiscal agents, etc.....	70, 119. 08
Naval boards.....	168, 868. 67
Naval auxiliaries.....	9, 016. 07
Naval dispensary.....	6, 624. 23
Navy Department.....	611, 388. 46
Navy rifle team.....	29. 24
Panama Canal duty.....	12, 951. 17
Radio service.....	12, 916. 41
Recruiting duty.....	221, 583. 53
Settling accounts.....	4, 249. 08
Special temporary duty.....	3, 123. 39
Supervision of districts.....	6, 592. 11
Travel under orders.....	42, 074. 41
Wireless duty.....	10, 736. 73
Total.....	1, 928, 181. 03

Pay of officers, nurses, and enlisted men, fiscal year ending June 30, 1918.

[Navy Department, Bureau of Supplies and Accounts.]

Station.	Title G, Industrial officers.	Title S, military.			Title T, tugs and lighters.		Title I, special-duty officers.		Title H, leave and waiting orders.		Title H, retired.		Aggregate.
		Officers.	Nurses.	Enlisted men.	Officers.	Enlisted men.	Officers.	Enlisted men.	Officers.	Enlisted men.			
Pertmouth, N. H.	\$63,348.68	\$38,086.26		\$19,934.75	\$83.33	\$24,797.20	\$9,617.52	\$5,591.74			\$54,102.05		\$213,541.53
Boston, Mass.	66,656.35	81,208.17		7,327.09		27,713.65	79,992.63	22,596.63			286,149.44		571,246.96
Training station, Newport, R. I.		121,639.87	\$3,284.68				55,438.09	10,766.13			41,200.66		253,379.43
Torpedo station, Newport, R. I.	41,420.62	8,027.50				160,126.05	6,787.52	528.63			11,634.36		228,826.08
New York, N. Y.	123,841.54	133,080.88	9,608.98	658.00			117,362.83	33,626.00			685,207.59		1,113,355.82
Philadelphia, Pa.	110,865.57	51,391.56					131,069.71	10,703.73			139,619.77		443,650.34
Naval Home, Philadelphia, Pa.		37,478.50	8,233.51	14,520.85			443.01	3,372.26			111,495.26		473,828.53
Baltimore, Md.		5,000.00					16,666.33	769.49			136,908.23		159,244.05
Naval Academy, Md.	804,241.24	75,556.71	12,403.21	23,391.62		25,460.97	3,515.79	10,385.16			101,745.05		943,376.96
Proving ground, Indian Head.		32,701.90					817,509.61	57,624.03	\$1,730.92		980,563.96	427.92	2,011,822.06
Norfolk, Va.	92,513.87	80,229.00	13,254.06			793.60	46,139.96	799.63			101,469.45		33,538.25
Charleston, S. C.	23,913.87	27,156.42	1,951.75			31,067.51	5,744.55	3,762.26			4,547.16		347,810.13
Port Royal, S. C.	13,405.44						2,153.73	321.78	103,267.55				119,178.50
Key West, Fla.	23,666.41					24,023.40		3,662.76			1,189.99		52,542.56
Guantanamo, Cuba.	22,665.44						52.00	553.39					23,270.83
Training station, North Chicago.		58,342.36		210,756.31			45,128.67	2,777.05			6,704.34		323,708.73
Las Animas, Colo.		23,913.42		18,649.52			9,475.56	10,026.71	54,433.87		9,725.68		126,224.76
Mare Island, Cal.	78,509.85	93,228.23	11,635.21			52,478.04	14,721.41	20,460.21			173,285.31		344,319.16
Training station, Cal.		28,140.72					32,527.50	3,041.49			31,185.58		144,895.29
Puget Sound, Wash.	91,614.63	35,774.99				2,700.04	13,757.26	3,263.74			20,885.12		167,985.80
Honolulu, Hawaii.		40,155.73					1,948.13	477.70			654.50		43,236.06
Guam.		47,305.43	3,238.49	29,372.04				1,255.21					81,171.17
Carville, P. I.	27,053.28	51,877.89	43,895.94	18,875.06		42,143.93	2,899.46						186,735.56
Olongapo, P. I.	30,082.96	52,799.99		8,093.22	2,665.72	69,867.34	5,044.00	318.33	4,571.51				173,443.07
Tutuala, Samoa.		59,582.09					1,281.02	145.44					60,988.55
Yokohama, Japan.		14,643.86		6,539.16			211.50	1,770.51					23,215.13
Navy pay offices.		43,474.51											43,474.51
Naval attachés, etc.							58,814.54						58,814.54
From summaries of ships' rolls.							62,342.66						433,577.82
From Marine Corps rolls (pay, Navy).							42,198.19	271,235.16					42,196.19
Total.	810,338.94	2,102,804.52	107,505.83	358,167.62	2,749.05	461,193.23	1,582,621.72	463,245.46	164,033.85	299,864.06	2,940,000.50	9,322,524.78	

Pay of officers, nurses, and enlisted men, fiscal year ending June 30, 1913—Continued.

RECAPITULATION.

	Officers.	Nurses.	Enlisted men.	Total.
Title O.....	\$810,338.94			\$810,338.94
Title S.....	2,102,804.52	\$107,505.53	\$358,167.02	2,568,477.97
Title T.....	2,749.05		461,193.23	463,942.28
Title I.....	1,582,021.72			1,582,021.72
Title H, leave, etc.	493,245.46		164,053.85	657,279.31
Title H, retired.....	2,940,000.50		299,864.06	3,239,864.56
Total.....	7,931,760.19	107,505.53	1,283,258.76	9,322,524.78

Expenditures for quarters, heat and light, and commuted rations, fiscal year ending June 30, 1913.

[Navy Department. Bureau of Supplies and Accounts.]

	Officers.			Nurses.			Enlisted men, commuted rations.	Totals.			Aggregate.
	Quarters.	Commuted rations.	Heat and light.	Quarters.	Commuted rations.	Heat and light.		Quarters.	Commuted rations.	Heat and light.	
Portsmouth, N. H.....	\$9,860.81		\$6,609.49					\$9,860.81		\$6,609.49	\$16,470.30
Boston, Mass.....	30,317.00		14,424.65					30,317.00		14,424.65	44,741.65
Training station, R. I.....	23,403.00		10,235.44		\$112.85			23,403.00	\$112.85	10,235.44	33,751.29
Torpedo station, Newport, R. I.....	3,751.20		2,250.03					3,751.20		2,250.03	6,001.23
New York, N. Y.....	50,662.80		20,228.20		2,601.90			50,662.80	2,601.90	20,228.20	73,492.90
Philadelphia, Pa.....	44,496.40		18,258.94					44,496.40		18,258.94	62,755.34
Naval Home, Philadelphia, Pa.....	4,123.20				1,647.20		\$151.16	4,123.20	1,798.36		5,921.56
Baltimore, Md.....	3,912.80							3,912.80			3,912.80
Naval Academy, Annapolis, Md.....	49,617.86		26,130.61		1,584.40			49,617.86	71,771.50	26,130.61	147,519.97
Washington, D. C.....	162,434.40		55,337.45		2,543.65			162,434.40	2,543.65	55,337.45	230,318.90
Proving Ground, Indian Head.	223.20	3.30	493.05					223.20			716.26
Norfolk, Va.....	26,490.80		11,337.82		4,063.20			26,490.80	4,063.20	11,337.82	41,921.82
Charleston, S. C.....	5,365.60		3,062.32					5,365.60			8,427.92
Port Royal, S. C.....	5,578.00		462.74					5,578.00			6,040.74
Key West, Fla.....	1,464.40		619.00					1,464.40			2,083.40
Pensacola, Fla.....			18.75								18.75
Guantanamo, Cuba.....	32.00		221.41					32.00			253.41
Training station, North Chicago.....	10,776.40		5,512.20					10,776.40			16,288.60
Las Animas, Colo.....	1,619.90		679.99					1,619.90			2,299.89

Mare Island, Cal.	14,472.90	48.00	11,872.08	2,424.60	14,472.90	2,469.60	11,872.08	28,814.55
Training station, Cal.	5,968.00		3,202.90		5,968.00		3,202.90	9,161.90
San Diego, coal depot, Cal.			13.51				13.51	13.51
Seattle, Wash.	2,404.00		9,896.47		2,404.00		9,896.47	2,404.00
Puget Sound, Wash.	14,875.80		928.33		14,875.80		928.33	24,771.07
Pearl Harbor, Hawaii.	5,942.80		845.17		5,942.80		845.17	6,771.13
Guam, M. I.	6,004.60		1,308.48	1,081.30	6,004.60	1,081.30	1,308.48	8,014.97
Cavite, P. I.	3,286.80		1,546.08	1,446.00	3,286.80	1,446.00	1,546.08	20,132.58
Olongapo, P. I.	5,342.00		1,121.87		5,342.00		1,121.87	29,960.78
Tutulla, Samoa.	228.60		1.51		228.60		1.51	1,351.47
Yokohama, Japan.	1,298.00			109.50	1,298.00	109.50		1,407.01
Manila, P. I.	690.00				690.00			690.00
Navy pay offices.	6,812.00				6,812.00			6,812.00
Naval attachés, etc.	7,918.40		3,386.14		7,918.40		3,386.14	11,304.54
Total.....	504,361.57	70,235.40	210,067.60	584.50	504,946.07	124,835.16	210,067.60	839,848.83

TOTALS BY TITLES.

	Quarters.	Commuted rations.	Heat and light.	Aggregate.
Title G.....	\$92,169.20		\$90,209.40	\$182,378.60
Title S.....	150,827.06	827,982.86	63,788.09	302,598.01
Title T.....	1,759.61	36,804.00		38,563.61
Title I.....	269,442.20	42.00	86,072.11	345,559.31
Title H, leave.	743.00	33.30		751.30
Total.....	504,946.07	124,835.16	210,067.60	839,848.83

[No. 3.]

COMMITTEE ON NAVAL AFFAIRS,
Monday, December 15, 1913.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENT OF REAR ADMIRAL H. R. STANFORD, CHIEF
BUREAU YARDS AND DOCKS.

The CHAIRMAN. Gentlemen, we have with us this morning Admiral Stanford, Chief of the Bureau of Yards and Docks. Please turn to page 46 of the first draft of the bill, "Maintenance, Bureau of Yards and Docks." Admiral, the language is the same, but you are asking for an increase of \$200,000. We would be glad if you would state fully the necessity for that.

Admiral STANFORD. I have here an argument, in writing, urging an increase in both "Maintenance" and "Repair and preservation." The argument covers both appropriations, inasmuch as in a measure they overlap. For instance, maintenance appropriation is used for renewals and repairs required in power plants, by locomotive cranes, locomotives, elevators, and by traveling cranes in buildings. In these respects it borders very closely upon the work which is done under appropriation "Repairs and preservation" in making repairs to buildings, railroad tracks, paving, etc.

The CHAIRMAN. You may just insert that in the hearings, and then make such additional statements as you see fit.

Admiral STANFORD. The written statement follows:

MAINTENANCE, AND REPAIRS AND PRESERVATION.

The department is asking for an increase of \$200,000 in each of these appropriations, making—

Maintenance.....	\$1, 700, 000
Repairs and preservation.....	1, 000, 000

If the Bureau of Equipment is abolished, the appropriation "Repairs and preservation" should be still further increased in the amount of \$200,000 to provide for repairs to fuel plants, decreasing "Coal and transportation" by a like amount.

Attention is invited to a statement, Appendixes A and B, which I have had prepared, showing subheads for which "Maintenance" and "Repairs and preservation" have been expended during the fiscal year 1913. These statements have been compiled from various tables in the report of the Paymaster General and show expenditures under the various classes of accounts and separately by titles.

Expenditures for "Maintenance, 1913," totaled \$1,517,906.53, made up of—

Labor:		
Direct.....	\$1, 013, 931. 44	
Indirect.....	69, 131. 12	
		\$1, 083, 062. 56
Material:		
Direct.....	323, 440. 44	
Indirect.....	19, 288. 06	
		342, 728. 50
Public bills.....		92, 115. 50
Total.....		1, 517, 906. 53

Expenditures for "Repairs and preservation, 1913," totaled \$814,126.27, made up of—

Labor:		
Direct.....	\$381, 592. 66	
Indirect.....	98, 949. 09	
		\$480, 541. 75
Material:		
Direct.....	249, 186. 09	
Indirect.....	27, 799. 48	
		276, 985. 57
Public bills.....		56, 599. 35
Total.....		814, 126. 27

The excess of expenditures for the fiscal year 1913 over the amounts appropriated for that year represent payments on account of obligations incurred against appropriations of previous years in connection with contracts in progress at the beginning of the year. No deficiency was created under appropriations for 1913.

I desire to emphasize before the committee in the strongest language possible the pressing need for additional funds under these appropriations, if naval property is to be kept from going to rack and ruin.

The Bureau of Yards and Docks has had during 1913 available for upkeep of public works under its cognizance—

Maintenance.....	\$1, 500, 000
Repairs and preservation.....	800, 000
Total	2, 300, 000

It should be borne in mind, however, that by no means is this entire sum available for upkeep of property. Take maintenance, for instance. Out of this there must first be met what may be called "Fixed charges," incident to operation of our yards and stations. Under "Fixed charges" may be classed expenditures for clerical, drafting, and inspection expense; leave, holiday, and disability pay; cleaning yard and care of grounds; disposal of yard and ship refuse; heat, light, fuel, and water charges for military purposes; ferriage and wharfage; stationery; stable keepers; care of live stock; telephone operators; watchmen; janitors; attendants on fire apparatus; replacement of fire hose, office equipment, etc.

The amount charged against "Maintenance" for the year 1913 for "Fixed charges" approximated \$1,100,000. (See Appendix C, which is a statement compiled from Paymaster General's report.) The amount given is substantially correct, but not exact, as it is impossible under some subheads to separate exactly the amount paid from attendance from that paid for upkeep.

The amounts required for "Fixed charges" are determined by the accounting instructions in force, and these charges must be met, whatever they may prove to be, the balance of the appropriation being then available for upkeep of property, so far as it will go. The appropriation "Repairs and preservation" is practically all available for upkeep of property.

Instead, therefore, of having for 1913 \$2,300,000 for upkeep of property, there was available but \$1,200,000. This amount was still further reduced by necessary unforeseen expenditures for minor works of improvement, for which no specific appropriation was available.

The bureau has never had sufficient funds to provide adequately for the upkeep of public property under its cognizance and take care of the fixed charges incident to the operation of the yards.

The condition may best be illustrated by a specific instance, which is typical. At Mare Island for the fiscal year 1913 there was available under—

Maintenance.....	\$157, 000
Repairs and preservation.....	69, 150
Total.....	216, 150

Of the amount under "Maintenance" approximately \$120,000 was absorbed by fixed charges, leaving but \$96,150 for upkeep of public works, whose original cost of installation approximated \$10,600,000.

The public works officer at that station has made a very careful and painstaking estimate of the amount needed annually for the proper repair of such property, which totals \$191,680, or \$96,000 more than was allotted. The result of the necessity for

curtailing expenditures is illustrated by the following quotation from a letter of the public works officer:

"The tendency where funds are short is to postpone repairs in an endeavor to reduce expenditures, and this is carried to a point where repairs are imperative and very expensive. The yard dredge was not docked during 1913 for repairs. The floating pile drivers have not been docked for years. The yard landing floats were not docked during 1913. The condition on pile driver No. 6 became so serious that it was necessary to pump it out frequently, and estimates were made for docking and repairing. While the estimators were aboard, with a stiff southwest wind and heavy sea from passing vessel, the pile driver capsized and sank, and the two estimators narrowly escaped with their lives, as they were below sounding the timbers when the pile driver blew over. This was raised and docked at considerable expense. Following this experience it was decided to dock and repair all public works floating property at the earliest moment, and one landing float was docked and repaired in June, and other repairs on floating property was postponed until the fiscal year 1914, or until after June 30, because of shortage of funds and because of interference with the use of docks for ships nothing was placed in dock during July; but on August 2 the yard dredge, the second floating pile driver, and one landing float were placed in Dry Dock No. 1. The original estimate for repairs to each was as follows, exclusive of docking charges:

"Yard dredge.....	\$2, 180
"Pile driver.....	1, 970
"Dart float No. 1.....	530

"After the above were docked and repairs started it was discovered that in every case the condition was much more serious than surface conditions indicated. The wooden hull of the dredge was found so badly rotted that had it been practicable to place the dredge out of commission until a new hull could be constructed the public works officer would assuredly have so recommended. But this could not be done, because in a few months the mud would so close the entrance of Dry Dock No. 2 that the caisson could not be moved nor the dock used. It was, therefore, decided to repair the hull to render this dredge safe for two years' operation and in the meantime prepare an estimate for a new hull and request authority to construct same under appropriation 'Hydraulics, Mare Island Strait.' The above estimate was increased by the sum of \$1,855 to take care of the renewal of additional two deck beams, 87 vertical stanchions, 6 frames, and the remainder of plank shear.

"In the case of pile driver No. 4, the hull is steel, and, after further examination, showed that the greater part of the rivets were badly corroded and loose and would require cutting out and re-driving, and the estimate was increased in the sum of \$390.

"In the case of float No. 1, the increased cost was \$365. This brought the estimates on these three appliances to \$8,022."

For the present fiscal year the conditions are still worse, in that no increases were made in these appropriations for 1914. During the present year the bureau with the same amount of money must not only provide for the upkeep of a larger amount of property, but must also meet the increased expenses incident to the enlargement of operations at Guantanamo and Pearl Harbor and the prospective requirements of Pensacola and New Orleans.

The estimates submitted from the yards for the fiscal year 1915 aggregate:

Maintenance.....	\$1, 925, 000
Repairs and preservation.....	1, 080, 000
Total.....	3, 005, 000

If Pensacola and New Orleans are placed in full operation these two yards will require an additional \$60,000 under "Maintenance" and \$40,000 under "Repairs and preservation."

The department is asking for \$400,000 increase under these two appropriations. As a matter of fact the bureau needs twice the increase and the appropriating of \$3,000,000 yearly would be none too much to properly care for the Government property under its cognizance and meet the "Fixed charges" which must inevitably be provided for.

Object.	Time.					Total.
	E.	F.	G.	N.	T.	V.
Grounds.....	\$11,705.01		\$25,331.16			\$37,036.17
Buildings.....	73,863.26		90,357.19			164,220.45
Water front.....	13,363.36		31,832.25			45,195.61
Yard appliances.....	312.45		2,833.96			3,146.41
Floating property.....	1,748.45		14,136.82			15,885.27
Railroads.....	15,840.97		18,019.90			33,860.87
Furniture.....	184.20		38.01			222.21
Office supplies and equipment.....						
Dry docks.....	29,208.73		100,162.70			129,371.43
Fire protection.....						
Telephone and telegraph.....						
Coaling plants.....	284.16		304.60			588.76
Machinery and tools.....						
Miscellaneous.....	2,514.16		5,990.34			8,504.50
Power plants.....		\$24,498.04	20,540.99			45,039.03
Models and equipment.....				\$48.47		48.47
Radio stations.....						
Heat, light, power, and water.....						
Handling materials.....						
Leave pay.....						
Holiday pay.....						
Disability pay.....						
Incidentals over and under absorbed.....						
Total.....	149,125.87	24,498.04	234,587.92	48.47		514,159.30

Total expenditures for labor..... \$490,541.75= 96.04 per cent.
 Total expenditures for public bills, material, etc..... 333,694.92= 63.95 per cent.

Total expenditures for repairs and preservation..... 814,126.67=100.00 per cent.

APPENDIX A.

Maintenance, Yards and Docks—Expenditures during fiscal year ending June 30, 1913.

Objects.	Titles.								Total
	E.	F.	G.	N.	R.	S.	T.	V.	
Grounds.....	\$2,622.27		\$23,426.20		\$160.15	\$121,485.10			\$147,686.72
Buildings.....	5,793.45		33,357.84		2,050.69	74,764.86			115,966.83
Water front.....					46.07	437.80			486.87
Yard appliances.....	1,495.24		11,477.65			1,505.57			14,478.46
Floating property.....	1,813.36		4,772.23		77.29	9,205.46			14,576.78
Railroads.....	20,597.03		28,346.55						30,162.91
Furniture.....	19,374.28		2,715.52		27,845.46	12,443.01			63,601.02
Office supplies and equipment.....	315.00				2,775.21	6,415.40			28,864.89
Dry docks.....			333.96						648.98
Fire protection.....	6,933.54		50,355.27		2,182.00	18,252.12			77,722.93
Telephone and telegraph.....	2,645.08		6,575.68		2,302.45	9,732.74			21,255.95
Vehicles and live stock.....	2,369.80		7,082.87		3,536.30	53,862.62			66,831.59
Machinery and tools.....	5,020.42		4,484.84		942.65	7,189.82			17,637.73
Miscellaneous.....	2,270.42		10,514.67		3,212.58	21,203.40	\$357.50		37,558.57
Power plants.....		\$12,587.32	43,501.55		5,253.64	13,708.26			125,050.79
Machinery plant.....		12,059.49							12,059.49
Removal of refuse.....			35,010.40			25,706.64			60,717.04
Office force.....			173,046.79			78,494.31			251,541.10
Miscellaneous classified employees.....			13,406.06	\$2,349.30		25,063.33			38,461.38
Models and equipment.....									2,349.30
Radio stations.....					650.00	100.16			750.16
Treat, light, power, and water.....						122,224.29			122,224.29
Inspection department (outside).....						4,028.34			4,028.34
Handling materials.....			1,446.26			168.04			1,614.30
Storekeeping.....						1,066.47	17,557.60		1,066.47
Tugs and lighters.....									17,557.60
Leave pay.....								\$88,953.68	88,953.68
Holiday pay.....								91,867.48	91,867.48
Disability pay.....								16,100.37	16,100.37
Incidentals, bureau pay (over and under absorbed).....								48,317.05	48,317.05
Total.....	71,771.09	74,646.81	447,949.81	2,349.30	51,037.49	607,007.75	17,915.10	245,228.58	1,517,906.33

1 Credits.

Total expenditures for labor..... \$1,083,982.56 = 71.36 per cent.
 Total expenditures for public bills, material, etc..... 484,943.97 = 28.64 per cent.
 Total expenditures for maintenance..... 1,517,906.53 = 100.00 per cent.

APPENDIX B.

Repairs and preservations, yards and docks—Expenditures during fiscal year ending June 30, 1913.

Object.	Title.						Total.
	E.	F.	G.	N.	R.	S.	
Grounds.							
Buildings.	\$11,795.01		\$24,331.16		\$7,535.41	\$41,295.49	\$84,958.07
Water front.	71,863.29		190,357.19		221,207.32	176,210.44	374,638.41
Yard and appliances.	13,343.58		31,833.25		2,844.98	18,445.98	67,577.77
Floating property.	1,742.45		2,833.96			2,747.84	6,324.25
Railroads.	15,840.97		14,136.82		104.71	3,067.33	19,887.81
Furniture.	184.20		18,019.90				33,860.87
Office supplies and equipment.			38.01			30.96	263.17
Dry docks.					83.39	646.90	730.19
Fire protection.	29,208.73		109,162.70				138,371.43
Telephone and telegraph.						332.73	332.73
Coaling plants.					21.51	1,173.15	1,194.66
Machinery and tools.	284.16		304.60				588.76
Miscellaneous.						630.56	630.56
Power plants.	2,514.16		5,999.34		820.03	7,282.01	16,615.54
Models and equipment.		\$24,498.04	26,540.99		2,876.26	8,850.39	62,768.68
Radio stations.				\$48.47			48.47
Heat, light, power, and water.						201.98	201.98
Handling materials.						1,778.97	1,778.97
Leave pay.						6.17	6.17
Holiday pay.							
Disability pay.							
Incidentals over and under absorbed.							
Total.	140,125.87	24,498.04	334,557.92	48.47	37,304.61	266,701.68	814,126.67

Total expenditures for labor..... \$480,541.75= 58.04 per cent.

Total expenditures for public bills, material, etc..... 333,584.92= 40.96 per cent.

Total expenditures for repairs and preservation..... 814,126.67=100.00 per cent.

APPENDIX C.

Fixed charges—Expenditures from maintenance, Yards and Docks, during fiscal year ending June 30, 1913, for those objects which may be classed as "fixed charges."

Objects:		Objects:	
Grounds.....	\$144,914.30	Heat, light, power, and water.....	\$122,224.29
Office supplies and equipment.....	28,544.89	Inspection department (outside).....	4,028.34
Fire protection.....	48,607.39	Staircases.....	1,068.45
Telephone and telegraph.....	16,308.42	Tugs and lighters.....	17,537.65
Vehicles and live stock.....	60,028.46	Leave pay.....	88,933.68
Miscellaneous.....	31,713.07	Holiday pay.....	91,857.48
Removal of refuse.....	60,717.04	Disability pay.....	16,100.37
Office force.....	251,511.10	Incidentals and bureau pay.....	43,317.05
Miscellaneous classified employees.....	38,461.38	Total.....	1,094,172.66
Models and equipment.....	2,346.30		

Admiral STANFORD. In my experience and after my visits to the different navy yards it appears to me that the most urgent need under the cognizance of the Bureau of Yards and Docks is increased provision for the maintenance and repair of public works property. The amount now appropriated is inadequate. The value of naval public works is increasing at the rate of three, four, or five million dollars a year, and the aggregate now probably amounts to over \$100,000,000. To properly care for this property, consisting of buildings and wharves, some of which are of temporary construction; of seawalls, which are suffering injury due to the action of seawater and frost; of pavements, which are being worn by traffic; and of sidewalks, which are being raised by roots of trees and worn by use, etc., requires more money than has been provided by recent appropriations.

The CHAIRMAN. You used the word "pavements"; you mean the streets where the wagons and heavy loads are hauled?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. You do not mean the sidewalks?

Admiral STANFORD. The term pavements is used to distinguish paving used for vehicles from sidewalks used for foot traffic. In many cases property is suffering deterioration due to the lack of the stitch in time, and if we could make the small repair which is needed to-day we would be saved expenditures many times greater which will have to be made in the course of time. As an example, a number of wooden dry docks are in bad condition due to the decay of altars; decayed spots should be repaired promptly and not allowed to enlarge to menace adjacent portions. In the interest of the Government, I earnestly urge your favorable consideration of these comparatively small increases in the appropriations "Maintenance" and "Repairs and preservation."

Mr. ESTINOPAL. Admiral, is not some of this property abandoned? A good deal of this property that is to be repaired and looked after, isn't it abandoned?

Admiral STANFORD. There are several stations which are closed and inactive.

Mr. ESTOPINAL. I mean there is no active work going on at many of these plants?

Admiral STANFORD. That is true. It is my opinion, however, that no matter whether property is in use or is in idleness, if it is under the cognizance of the Navy Department it is obligatory upon the department to keep that property in proper condition of repair. It is a physical asset, and as such should be maintained up to the maximum value. If buildings are allowed to go into a condition of bad repair, if the gutters begin to leak or the roofing becomes defective, permitting rain water to get into the interior and ruin plaster, decay flooring, etc., it is no good business. Regardless of whether property is in use or is in idleness, it is our duty to maintain it in a condition of good repair.

Mr. ESTINOPAL. Don't you think, Admiral, that some of this property could be put to use now—could be utilized by the Government? The naval station at New Orleans that has been abandoned for four years—is not that in comparatively good repair?

Admiral STANFORD. I recently made an inspection of the New Orleans station. It is in good repair to-day, but in a year it would be much deteriorated if minor repairs now necessary are not made to the roofs of several of the buildings.

Mr. LEE. Is there any work being done at New Orleans?

Admiral STANFORD. Not at present, except occasionally as the floating dock is made use of by commercial vessels.

Mr. ESTOPINAL. Would it require any large amount to put this station to work?

Admiral STANFORD. The station, in my opinion, is ready to begin operations to-morrow. The tools, machinery, and equipment are in excellent condition of repair. The buildings which contain this mechanical equipment are in good repair. The dry dock is in excellent condition. The station could be put into service immediately, if required by the department.

Mr. KELLEY. Will the opening of the Panama Canal increase the amount of work done at New Orleans?

Admiral STANFORD. It is reasonable to suppose that the shipping into and out of our southern ports will materially increase with the opening of the canal. Accepting that premise, undoubtedly there will be an increased use for the naval station.

Mr. WITHERSPOON. Why would that increase the use of the naval station?

Admiral STANFORD. There are a great many vessels arrive at the port of New Orleans which have a tonnage in excess of the capacity of the commercial docks which may be in need of repairs to enable them to leave port.

Mr. ESTOPINAL. They are now repaired at the dock?

Admiral STANFORD. Yes, sir. It is the present practice of the Navy Department to permit the use of the floating dock for such commercial vessels as are beyond the capacity of the commercial docks.

Mr. ESTOPINAL. As a matter of fact, some of the commercial vessels go now into that dock?

Admiral STANFORD. Yes, sir.

Mr. ESTOPINAL. Would it not be likely that a fleet of gunboats, if kept in the Gulf adjacent to the coast, could be repaired at that port to better advantage than at any other port in the Gulf?

Admiral STANFORD. Other things being equal, it almost goes without saying that the more convenient the base of repairs the better, and if gunboats are operated by the Navy Department in southern waters, New Orleans would certainly be a convenient base for their repair.

Mr. ESTOPINAL. The dock there is sufficient to take any vessel up to 15,000 tons?

Admiral STANFORD. Yes, sir.

Mr. ESTOPINAL. It would not require any large amount to reopen the yard? It could be done out of this lump fund that is appropriated for yards and docks?

Admiral STANFORD. There are repairs to the wharf and to various buildings which might require \$10,000, \$15,000, or \$20,000 for which available funds under appropriation "Repairs and preservation" could properly be used. These repairs should be made whether the station is opened or not.

Mr. ESTOPINAL. It would not require any large amount to open the yard?

Admiral STANFORD. No, sir.

Mr. ESTOPINAL. A specific appropriation?

Admiral STANFORD. Beside funds from the general appropriation for repairs there are various balances remaining from past appropri-

ations for specific purposes which are available for expenditure at New Orleans.

Mr. ESTOPINAL. Yes; \$225,000.

Admiral STANFORD. There are two large items for extension of the power plant, amounting to over \$124,000, which I would not recommend expending at this time, for the reason that the power plant in building No. 2 is, in my opinion, ample for the immediate needs of the station. There is also a balance of over \$57,000 under an appropriation for the construction of another building for the hull division, but apparently the present building capacity is in excess of needs, and the construction of an additional building at this time does not seem necessary or warranted.

The other balances remaining are of comparatively small amounts and are for such work as extending the railroad system, extending the sewer system, etc.

The CHAIRMAN. The next item is "Contingent, Bureau of Yards and Docks." I see you have inserted "and minor extensions and improvements to public works at navy yards and stations," and ask for an increase of \$20,000.

Admiral STANFORD. One reason why appropriation, "Repairs and preservation," is insufficient is because under present conditions that fund is used for making minor extensions and alterations desired at different yards from time to time. For instance, one of the manufacturing divisions may purchase a machine tool, and because of insufficient space for its installation they will arrange to have a building extended to provided for the housing of the tool. Such use of appropriation "Repairs and preservation" is, to my mind, improper. The title of the appropriation should limit expenditure of the fund to the legitimate repair of existing property, which is so urgently needed at so many places.

For the reasons I have stated I would recommend that the wording of the appropriation "Contingent" be extended to cover minor extensions and alterations, such as a short extension of a railroad track to serve a building which may not have been connected with the system, to extend a shed to protect a machine tool which may be purchased, to install a counter to facilitate the operations of the pay office, to extend the lighting system as may be necessary to permit of the utilization of a building not previously used for manufacturing purposes.

The CHAIRMAN. Then would you pay that exclusively out of "Contingent, Bureau of Yards and Docks," and not pay it out of "Maintenance, Bureau of Yards and Docks," or "Repairs and preservation" either?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. So that it would limit those things to this appropriation "Contingent," and they could not be paid out of these other lump-sum appropriations?

Admiral STANFORD. That is my idea exactly.

The CHAIRMAN. Is there anything further you want to state?

Admiral STANFORD. I have here sheets on which are entered minor appropriations requested from various navy yards which are of such amount as would hardly warrant specific appropriations for each item. These items have been divided under three heads: "Maintenance," "Repair and preservation," and "Contingent." An inspection of these sheets will give an idea of the new work which it would

be proposed to accomplish under appropriations "Maintenance," "Repairs and preservation," and "Contingent," provided the amounts of those appropriations are increased as recommended.

The CHAIRMAN. Insert those in your hearings, will you?

Admiral STANFORD. Yes, sir. The items are as follows:

List of items submitted by the various navy yards and stations and included in preliminary estimates submitted to department, which should be eliminated therefrom and provided for under appropriation, "Maintenance, yards and docks."

Navy yard, Portsmouth, N. H.: Transferring boilers from building No. 79 to naval prison.....	\$1, 500
Navy yard, Boston, Mass.:	
Equipping Dry Dock No. 2 with electrically driven pump and capstan.....	2, 300
Metal shelves and racks in pattern storehouse.....	4, 000
Meter-testing set.....	3, 800
Navy yard, New York, N. Y.:	
Salt-water standpipe, building No. 22.....	2, 500
Extend steam-heating system to Dry Docks Nos. 2 and 3.....	4, 000
Cinder running path for enlisted men.....	500
Modern fire-alarm system.....	7, 166
Extension to booms of cranes 195-197 and Victor.....	4, 000
Traps and return steam mains from blacksmith shop to central power plant.....	4, 500
Navy yard, Philadelphia, Pa.: Air distribution.....	4, 000
Navy yard, Washington, D. C.: Machinery for power plant.....	4, 000
Navy yard, Norfolk, Va.:	
Railroad rolling stock, to continue.....	10, 000
Renewal of telephone cables to marine barracks and St. Helena.....	3, 500
Telephone system, extensions, to continue.....	5, 000
Navy yard, Charleston, S. C.: Water system extensions.....	5, 000
Naval station, Key West, Fla.: Dredging and filling in, to continue.....	5, 000
Navy yard, Mare Island, Cal.:	
Pneumatic system extension.....	7, 000
Mess hall and kitchen installation, naval prison.....	6, 000
Elevator, building No. 207.....	3, 500
Naval station, Guam: Improvements to distilled-water system.....	4, 000
Naval station, Olongapo, P. I.: Replacing telephone system.....	5, 500
Naval Observatory: For cleaning, repair, and upkeep of grounds and roads..	13, 000
Naval training station, Cal.: Dredging cove on eastern end of island.....	1, 500
Total.....	111, 266

List of items submitted by the various navy yards and stations and included in preliminary estimates submitted to department, which should be eliminated therefrom and provided for under appropriation, "Repairs and preservation, Navy yards and stations."

Navy yard, Boston, Mass.:	
Investigation and repair of yard water mains.....	\$4, 500
Improvements in lighting systems of shops and other buildings.....	10, 250
New fence around prison yard and improving yard.....	2, 000
Navy yard, Washington, D. C.: Rewiring certain yard buildings.....	8, 870
Navy yard, Norfolk, Va.: Renewals of roofs of yard buildings.....	50, 000
Navy yard, Charleston, S. C.:	
New superstructure for Pier No. 314, repair wharf.....	29, 550
Railroad system, extensions and improvements.....	5, 000
Navy yard, Mare Island, Cal.: Repairs to buildings 87, 89, and 91.....	10, 000
Naval station, Tutuila:	
Sea wall.....	4, 000
Cement gutters, main road of station.....	2, 000
Naval training station, Rhode Island: Repairs to barracks A, B, and C.....	6, 000
Engineering experiment station, Annapolis, Md.: Repairs to bulkheads.....	400
Naval training station, Cal.: Repairing long dock.....	4, 500
Total.....	137, 070

List of items submitted by the various navy yards and stations and included in preliminary estimates submitted to department, which should be eliminated therefrom and provided for under appropriation, "Contingent, Bureau of Yards and Docks."

Navy yard, Portsmouth, N. H.:	
Moving copper shop to building No. 18.....	\$2,000
Fitting up building No. 89 for outside mechanics.....	2,000
Navy yard, Boston, Mass.:	
Moving chemical laboratory from building 31 to building 34.....	4,000
Low-pressure boiler and house for wood-bending boxes.....	2,500
Improvements to building No. 114.....	4,000
Improvements to building No. 64 and rail connection to building No. 105.....	3,500
Loading platform for refuse.....	3,000
Visitors' water-closets.....	2,800
Yard scrap bins and storage space.....	3,000
Improvements to garbage dump.....	3,000
Navy yard, New York, N. Y.:	
Latrines and wash rooms.....	3,500
Extension of lumber shed, building No. 214.....	3,850
Temporary lean-to on building No. 128.....	2,500
Lavatories and retiring room for visitors.....	2,000
Cart shed.....	2,500
Navy yard, Norfolk, Va.:	
Fireproof vault for records.....	6,000
Lavatories and toilet facilities, to continue.....	5,000
Freight wharf and bunk house.....	
Oil tanks and equipment.....	
Navy yard, Mare Island, Cal.:	
Casting cleaning shed for foundry No. 2.....	3,800
Construction of scrap bins.....	1,500
New cells and gallery, naval prison.....	10,500
Rivet storage building.....	2,000
Roof over court machine shop No. 2.....	3,000
Extension of oil house, building No. 73.....	4,500
Quarters for prison warden.....	3,000
Naval station, Guam, addition to storehouse.....	5,000
Naval station, Cavite, alterations in building No. 24.....	3,500
Naval station, Olongapo, P. I., extension to foundry.....	4,000
Naval station, Tutuila:	
Enlisted men's quarters.....	3,000
Bakeshop.....	1,500
Officers' quarters.....	2,200
Quarters for secretary to commandant.....	4,000
Total.....	106,650

The CHAIRMAN. You are not asking for anything at the navy yard, Portsmouth. At the navy yard, Boston, you are asking for improvement of sanitation systems, including washrooms, lockers, and water-closets, \$12,000; additional transportation facilities, \$10,000; in all, \$22,000. I will ask you to explain those two items. What is the necessity for the first one?

Admiral STANFORD. This appropriation is urged to provide sanitary lavatory and toilet facilities in connection with shops in buildings, 22, 42, 103, and 108.

The CHAIRMAN. How many men do you have working in those four shops that you have mentioned?

Admiral STANFORD. I presume there are 1,200 to 1,500 men.

The CHAIRMAN. Now, the second item.

Admiral STANFORD. The yard has two locomotives which are not able to handle the traffic in time of emergency and during the winter when the amount of coal used in the central power plant is very large. Appropriation is desired to provide for the purchase of an additional locomotive and an additional power truck.

Mr. ROBERTS. I want to ask the Admiral if he does not think it is important to continue paving in that yard.

Admiral STANFORD. It is certainly true that the entire yard is not paved as well as it should be. There are areas which are not paved, and there are other areas on which the pavement is not in especially good condition. The improvement of the paving would unquestionably facilitate the work of the yard.

Mr. ROBERTS. Let me put the question another way. Is it not important to continue the paving in that yard as it is in the New York yard?

Admiral STANFORD. I should not think so.

Mr. ROBERTS. Why not?

Admiral STANFORD. There is more work being done at the New York yard, and the water front at New York is not as well paved as the water front at the Boston yard. The water front is the principal working area.

Mr. ROBERTS. Is it not a fact that that is one trouble in the Boston yard, that the water front is not paved; that they have paved the back streets, but not down to the water front?

Admiral STANFORD. The recommendation from the yard does not indicate the need of paving along the water front. Of course, the use of the water front for military purposes depends upon the policy of the department, and from what I can gather a more extensive use of the yard at Boston is prevented because of the fact that it is impractical to increase the berthing space at that place. The yard is now utilized to just about as great an extent as practicable with the water front which is available.

Mr. ROBERTS. I think that is an error, Admiral. All that timber basin can be utilized on the water front—on the upper end of the yard.

Admiral STANFORD. I know where it is.

Mr. ROBERTS. There is a considerable area of land and also water front that can be utilized at some time.

Admiral STANFORD. It is my impression that the pierhead line in front of the old timber basin is not far enough from the main water front of the yard to permit of the building of piers.

Mr. ROBERTS. I know, but that can be utilized by laying a ship alongside without running a pier out there. You remember the use that was made of it in years back has been to moor the old receiving ship, the *Wabash*. I do not know what is in its place now.

Admiral STANFORD. I do not know what is there to-day.

Mr. ROBERTS. I think there is a water front there, however, that can yet be utilized for manufacturing purposes, unquestionably. It can not be utilized perhaps as much as down at the lower end of the yard. There is no question that the water front in the Boston yard is badly in need of paving.

Admiral STANFORD. I know there is additional paving desirable.

The CHAIRMAN. The next item is "Navy yard, New York, paving and grading, to continue." Last year we gave you \$15,000. This year you are wanting \$20,000. Where is it you want to do that, and what is the necessity for it?

Admiral STANFORD. This estimate is in line with the general project of gradually replacing present pavements of the yard with modern smooth pavements. The present paving of the yard is, in general, in a most deplorable condition, much of it being so rough

and irregular as to greatly increase the cost of the yard transportation, not only due to loss of speed to vehicles, but also because of increased maintenance charges resulting from excessive wear on vehicles. Most of the pavement in the yard is of the Belgian granite block type laid without any foundation, and can hardly be called pavement. It is in the interest of economy to replace this old pavement as rapidly as possible.

The money that was appropriated last year was used principally for paving along Dry Docks Nos. 1 and 4 and the streets in the immediate vicinity of those docks.

The CHAIRMAN. How much is the aggregate amount of paving yet to be done?

Admiral STANFORD. Probably \$50,000 will be required for the efficient paving of the principal areas along the water front and the principal thoroughfares.

The CHAIRMAN. Do you know how much we have appropriated for the paving in the New York Navy Yard in the last five years?

Admiral STANFORD. Yes, sir. \$54,000.

The CHAIRMAN. Yard railroad system and equipment. Last year we gave you \$25,000; you want \$20,000 this year.

Admiral STANFORD. The yard railroad tracks are in many places in extremely unsatisfactory condition. It is highly desirable that portions of the present track system, which is of a very light construction, be replaced with heavier rails and roadbed, and following construction which will largely obviate maintenance charges, to be a design which will permit paving to the rails. It is also desired to increase the equipment by the purchase of one locomotive crane and four flat cars.

The CHAIRMAN. Improvement of water front to continue, \$175,000. We gave you \$100,000 last year. Where is that improvement of the water front to take place?

Admiral STANFORD. Under last year's fund?

The CHAIRMAN. Under this that you have here now.

Admiral STANFORD. The yard at present is most seriously handicapped for lack of proper berthing space. This estimate is for the purpose of constructing one additional pier, to be known as Pier C, to be located in the vicinity of the launching ways and adjacent to Pier D. The estimate is sufficient for a pier 100 feet wide and 600 feet long, with necessary tracks and public utility accessories. One side of the pier will be used primarily for fitting out new vessels, and the pier will probably have built upon it sheds for doing light work in connection with shipbuilding.

The CHAIRMAN. Is that pier to be constructed from that part of the land that is now known as Cob Dock?

Admiral STANFORD. No, sir.

The CHAIRMAN. It was contemplated heretofore to remove what was known as Cob Dock.

Admiral STANFORD. Cob Dock is now all removed.

The CHAIRMAN. Will this appropriation of last year of \$100,000 be sufficient to completely remove Cob Dock?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Has some of Cob Dock been taken away since the committee was there in June?

Admiral STANFORD. The work of dredging is just completed. The removal of the dock has been completed since you were there.

The CHAIRMAN. And this \$100,000 that was appropriated last year will complete the removal of Cob Dock?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Are you going to build a pier ultimately in that space where the Cob Dock was taken away?

Admiral STANFORD. This proposed pier will extend out from the main water front, and its outer end will extend into the area where the old Cob Dock used to be.

The CHAIRMAN. But where Cob Dock is removed, most of it then will be water?

Admiral STANFORD. Yes, sir; open water space.

Mr. ROBERTS. This \$175,000 is for a pier?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Now, why not so state in the appropriation? It is under the general heading "Improvement of water front." Would it not be better to specify what it is for?

Admiral STANFORD. We desire not to do so unless you particularly prefer otherwise, for the reason that there is considerable water-front improvement required, including not only a new pier but also the improvement of the main sea wall surrounding the water front of the yard. The \$175,000 will probably all be required for the pier, but it may be that after receiving bids for the pier it will be found that the full sum would not all be required, in which case the balance could be utilized most advantageously for general water-front improvements. If practicable, I would rather not have the limitation to its expenditure.

The CHAIRMAN. How long would it take you to complete that pier after you have matured your plans and advertised for bids?

Admiral STANFORD. It would probably require from 10 to 12 months.

The CHAIRMAN. Can you do it all in the next fiscal year, or could a part of that appropriation go over to the subsequent year?

Admiral STANFORD. The answer to that question depends largely upon when this bill shall be enacted. If the bill should become law by April or May, so that we could prepare our plans and open bids about the 1st of July, I think we could safely predict that the pier would be completed within the next fiscal year; but if, on the other hand, the bill should not be passed until August, as was the case year before last, it would be impracticable to design the pier, open bids, and complete the structure before the following 30th of June.

Mr. ROBERTS. After all, will you indicate here [indicating a plot of the navy yard] where that additional pier is required?

Admiral STANFORD (indicating). Here is cob dock, here is Pier D. Pier D will extend out to there. Pier C will extend out like this. Here are the building ways. When a vessel is launched it would probably be secured to that side of the pier to be fitted up and completed, and the other side of the pier would be utilized for vessels under general repair.

Mr. ROBERTS. You call this Pier D?

Admiral STANFORD. Pier D. Those two piers have been recently completed. The outer end of Pier D will be completed, now that cob dock is removed. If we get this \$175,000 it is not improbable

that we would utilize \$10,000 or \$15,000 of the money for the completion of outer end of Pier D. It has been impracticable heretofore to complete the outer end of Pier D because of the interference of cob dock.

Mr. ROBERTS. You have the money now?

Admiral STANFORD. Available money is being used to dredge the basin to a depth of 33 feet, and practically the full amount is required to bring about that result. The yard recently recommended that a portion of the amount, instead of being expended for obtaining a depth of 33 feet in the vicinity of ordnance dock, should be used for extending Pier D; but dredging work is being performed under a very advantageous contract, and it was decided to expend the whole sum for dredging and let Pier D be completed subsequently.

The CHAIRMAN. Did you continue that contract which you had before it was authorized in the last appropriation bill?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. And you are dredging that under that contract?

Admiral STANFORD. No, sir; there was another more advantageous contract made for the removal of cob dock. There was money appropriated with which to complete a certain general dredging project, and the contract for this general dredging was extended under that completion appropriation. Then, this other item of \$100,000 was used for the removal of cob dock.

The CHAIRMAN. And you are getting the dredging, however, on the basis of that advantageous contract which you made year before last?

Admiral STANFORD. No, sir; not exactly. The new contract for removal of cob dock was at price of 31 cents per cubic yard, and the previous contract was at price of 32.2 cents per cubic yard.

Mr. KELLY. Is there any likelihood, Admiral, that this New York Navy Yard may be abandoned some time for another place?

Admiral STANFORD. It seems improbable to me that it will be abandoned, for the reason that a portion of the property would probably revert to the original owners in accordance with the provisions of the deed, if it should be abandoned by the Navy Department for navy-yard use, which would prevent the realizing a large sum from the disposal of the property, which at one time was urged to provide funds with which to construct a new station.

Mr. TALBOT. What portion would revert?

Admiral STANFORD. The most valuable portion—the water front.

Mr. HENSLEY. I want some information on that \$175,000 item. You can not be definite with reference to what the dock will cost you?

Admiral STANFORD. Not absolutely, sir.

Mr. HENSLEY. It may not cost within \$15,000 to \$25,000 of the amount you have here, so far as you know?

Admiral STANFORD. The amount is probably a little more than would be actually required for Pier C.

Mr. HENSLEY. Then, you want this amount in the appropriation bill in a way that will not preclude you from using it for any other purposes you see fit?

Admiral STANFORD. Yes, sir; but only for water-front work.

The CHAIRMAN. It would be limited to the improvement of the water front.

Mr. HENSLEY. But on this item, don't you think, Admiral, it would be better to be more definite and certain with reference to what the money is to be used for?

Admiral STANFORD. It is very difficult at this time to be certain about the cost of any such large project, because bids vary so widely when they are received. For example, Piers E and F have been constructed under a contract, at about \$2 per square foot. The contractor failed to continue the work to completion, and the work was completed by the Government. I am inclined to believe the contractor failed largely because the contract price was insufficient for the work, and that the contractor probably underestimated costs. Pier C, which is proposed, will have an area of about 60,000 square feet, and at \$2 per square foot that would be \$120,000; but I have no idea we will receive a proposition from a good reliable contractor that would be within that amount.

Mr. WITHERSPOON. When the Government completed that other contract which the contractor had abandoned, how much did it cost the Government per square foot?

Admiral STANFORD. I can hardly answer the question in that form, because the contractor had completed the underwater portion and the large area of deck construction of the pier, leaving to be completed the railroad track and some of the accessory features.

Mr. WITHERSPOON. Were those the cheapest parts of it?

Admiral STANFORD. You can't compare the cost of railroad track with the cost of driving a pile.

Mr. WITHERSPOON. Is it not more costly to build work under the water than on top?

Admiral STANFORD. Yes, sir. The most difficult part of the work had been completed by the contractor, but apparently he was unable to place a contract for materials which he required for the completion of the pier.

The CHAIRMAN. Let me ask one more question on this same thing. You were speaking about that other contract. When the Government had it completed, did they hold the contractor upon the bond?

Admiral STANFORD. It was completed at the contractor's expense.

Mr. ROBERTS. What sort of pier is contemplated here?

Admiral STANFORD. It will be open construction.

Mr. ROBERTS. Is that the character of the other piers there?

Admiral STANFORD. Piers E and F consist of a wooden pile substructure, carrying a concrete superstructure, so designed that there is no wood exposed to decay. The portions of the pier which would naturally suffer decay are made of concrete, wood being used only for under-water portions where the water serves as an absolute preservative.

Mr. ROBERTS. Is that the construction of this proposed pier?

Admiral STANFORD. The pier has not been elaborated as yet, but the above type of construction has worked out very advantageously in connection with Piers E and F, and it is not improbable that a construction of same general type may be determined upon for Pier C.

Mr. ROBERTS. Which is the more expensive construction, Admiral, to make solid retaining walls and fill in, or make them open-work construction with a concrete deck?

Admiral STANFORD. It depends largely upon the location; upon local conditions.

Mr. ROBERTS. Do you mean these piers running out to the cob dock are open construction because of the effect of solid construction on the tidewater?

Admiral STANFORD. No, sir; because it is a more economical construction.

The CHAIRMAN. The next item is a distributing system, extension, to continue, including separator receivers, \$15,000.

Admiral STANFORD. Considerable work of extending electric-lighting and power circuits still remains to be performed for distribution of power to ships along the water front, especially on the ordnance dock. It is the general policy of the yard, in the interest of economy, to install as rapidly as possible A. C. power in all yard shops, and this work involves extension of the A. C. distributing system. The D. C. circuits around Dry Docks Nos. 2 and 3 are also in need of extension.

The CHAIRMAN. What do you mean by "D. C.?"

Admiral STANFORD. Direct current, as compared with alternating current.

The CHAIRMAN. To extend second floors, mold loft, \$8,500.

Admiral STANFORD. It is desired to connect the second floors of buildings Nos. 10 and 115 in order to provide a mold-loft floor having sufficient area for the work. Those buildings are opposite each other with a street in between, and it is proposed to bridge over the street area and connect the second floors by an open unbroken floor. The construction of large vessels requires a larger floor area in which to lay down molds.

The CHAIRMAN. And this would make the second floor continuous over the street?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Make it as if it were one building?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. The next item is for the navy yard, Philadelphia, Pa., quay wall and piers, \$50,000. Is that a new item or a continuation of one of last year?

Admiral STANFORD. That is to continue work for which an appropriation was made last year for the purpose of increasing berthing space on the south side of the reserve basin.

The CHAIRMAN. How much of that quay wall remains yet to be completed?

Admiral STANFORD. That all depends upon the extent to which the reserve basin will be developed.

The CHAIRMAN. How much remains that can be developed advantageously? What is the lineal distance along the water front?

Admiral STANFORD. It is possible to further extend the berthing space in the reserve basin several thousand feet. At just what point it will become desirable to discontinue the development because of increasing distance from the shop buildings depends largely upon the use which will later be made of the reserve basin for vessels in reserve.

Mr. ROBERTS. Admiral, with reference to the proposed canal dock—if I may term it such—that is to be considered for Philadelphia, where would this improvement go in with reference to the point where that dock comes into the reserve basin?

Admiral STANFORD (indicating on the plat). The money now available will complete Pier D and will construct 260 lineal feet of wall on the west side of the slip to the west of Pier D. The entrance

to the proposed dry dock would be west of Pier D. It is not proposed to build the sea wall across the head of the slip west of Pier D, for the reason that if the dock should be authorized it would be necessary to remove that sea wall.

In answer to the question of the chairman a moment ago, the sum of \$50,000, if appropriated, would construct about 800 lineal feet of retaining wall such as is now being constructed.

Mr. ROBERTS. You would construct 800 lineal feet, where, Admiral?

Admiral STANFORD. One plan would extend the wall to the westward. An alternate arrangement would be to extend a pier out beyond what is now the pierhead line of the reserve basin, forming a pier at an angle to the pierhead line, as indicated on the chart of the yard dated 1911. Whether it would be preferable to build straight sea wall or piers is a question to be settled by the department.

Mr. ROBERTS. What is the length of those piers already constructed?

Admiral STANFORD. They are 500 feet long and 80 feet wide.

Mr. ROBERTS. And you have money now to make a pier 200 feet?

Admiral STANFORD. There is money enough at present to build a wall 260 feet in length on the west side of the slip to the west of Pier D.

Mr. ROBERTS. Is it not desirable, before you go on with your quay wall, to continue that slip on at least to the pierhead line?

Admiral STANFORD. That would be done.

Mr. ROBERTS. Where will that money come from for the 240 feet necessary to come out to that line?

Admiral STANFORD. The funds now requested would be used for that purpose.

Mr. ROBERTS. In that \$50,000?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Will it take all of the \$50,000?

Admiral STANFORD. No, sir; \$50,000 will build about 800 lineal feet of wall; only 240 feet are required to reach the pierhead line.

Mr. ROBERTS. That is, you are building one side of your pier out to the line?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. How much money will it take to continue that 240 feet of wall out to the pierhead line?

Admiral STANFORD. It will cost about \$65 a foot, or about \$16,000.

Mr. ROBERTS. What is the width of this slip between this Pier D and the proposed Pier E?

Admiral STANFORD. About 350 feet.

Mr. ROBERTS. Ample for your dock?

Admiral STANFORD. Ample for the dock.

Mr. WITHERSPOON. How much sea wall have you there now? Where does it begin and where does it end?

Admiral STANFORD. About 9,000 feet in the reserve basin, beginning on the north side and extending to Pier D.

Mr. WITHERSPOON. You already have about 9,000 feet of sea wall?

Admiral STANFORD. Yes, sir; in the reserve basin.

Mr. WITHERSPOON. Now, this \$50,000 is to extend that sea wall. Where do you want to extend it?

Admiral STANFORD. It would be extended toward the west on the south side of the basin or used for the construction of an additional pier, as decided later by the department.

Mr. WITHERSPOON. You have not determined exactly how it will be done?

Admiral STANFORD. The adopting of detailed plan for the extension would follow the appropriation.

Mr. WITHERSPOON. Have you suffered any inconvenience yet on account of not having over 9,000 feet of sea wall?

Admiral STANFORD. The reserve basin is utilized for the berthing and care of vessels which are not actively in commission. The basin is especially good for this purpose, because the water is fresh and deterioration is far less rapid than in salt water. The location is also favorable for vessels in reserve, because of the climate and the material facilities.

Mr. WITHERSPOON. I understand that, but the point I wanted to get at is this. Have you ever had more vessels there to be berthed than you have had sea wall enough to accommodate up to this time?

Admiral STANFORD. It has been necessary to bank vessels at times because of limited berthing front. There will probably be increasing use made of the basin as new vessels are constructed and older vessels are placed in reserve.

Mr. WITHERSPOON. You have to increase the number of reserve vessels as we build more battleships; is that it?

Admiral STANFORD. With a limited personnel only a certain number of vessels can be maintained in active commission.

Mr. WITHERSPOON. You have kept all the vessels there that you wanted in reserve up to this time?

Admiral STANFORD. Up to this time; yes, sir.

Mr. WITHERSPOON. And you have had plenty of sea wall to accommodate them, haven't you?

Admiral STANFORD. There has not been serious inconvenience on that account.

Mr. WITHERSPOON. It has not injured any of them, has it?

Admiral STANFORD. No, sir. It should be noted, however, that there is now a reserve fleet upon the west coast in addition to the one upon the east coast; with the completion of the canal all vessels in reserve might be concentrated at Philadelphia. Of course, that depends entirely upon the department's policy.

Mr. WITHERSPOON. Suppose we do not build any more new battleships and you should not want to put any more of those vessels in reserve than you already have, then would this sea wall be sufficient to accommodate them?

Admiral STANFORD. They can get along, but it would be a good deal like crowding a great many people in a small room.

Mr. WITHERSPOON. The objection to that is that they do not get enough fresh air; but these battleships get plenty, don't they?

Admiral STANFORD. If vessels are banked, it is necessary to cross other vessels to reach the outer ones. It is desirable to have the vessels directly alongside of the quay walls instead of having them banked two and three deep, as would have to be done if there were more vessels than could be accommodated at the frontage available.

Mr. WITHERSPOON. How many vessels can you now accommodate there in these slips? You put two in each one, don't you?

Admiral STANFORD. A vessel may be placed on each side of each pier. I have seen three battleships in one of the slips.

Mr. WITHERSPOON. How many vessels can you put in those slips now as they stand, putting two in between?

Admiral STANFORD. Eight.

Mr. KELLY. Admiral, in case this channel or proposed dry dock is not cut across from the river to the back basin, is there some permanent improvement that needs to be made to make safe the channel through which the vessels pass?

Admiral STANFORD. The difficulty with the entrance to the reserve basin is that there is a very rapid shoaling where the entrance connects with the Schuylkill River. There is a conflict of currents which leads to the rapid deposit of silt in the natural entrance to the basin. There is no sea-wall construction that I know of that would prevent that deposit of silt.

The CHAIRMAN. Where does that silt come from, Admiral?

Admiral STANFORD. I presume a good part of it is picked up from the bottom of the river. It is a soft, mucky bottom at places and the current scours and cuts it and brings it into suspension.

The CHAIRMAN. When we were over there I was talking with several gentlemen, and they said that there was practically no silt came down the Schuylkill River.

Admiral STANFORD. I think there is very little brought down the Schuylkill and practically none down the Delaware.

The CHAIRMAN. He said there was practically none. Now, if that is dredged out once and there is so little comes down the Schuylkill and practically none down the Delaware, would there be a rapid accumulation?

Admiral STANFORD. The forming of shoals is probably due to the movement of silt in the bottom of the river somewhat in the same manner as sand bars are formed and moved in the Mississippi River.

Mr. ESTOPINAL. But the Mississippi deposits are silt that is brought down.

Admiral STANFORD. In the upper parts of the river there is also sand.

Mr. KELLY. Then the only way to keep that channel open would be to dredge it from time to time?

Admiral STANFORD. Yes, sir.

Mr. WILLIAMS. Where is it that this silt would deposit?

Admiral STANFORD. At the confluence of the Delaware and Schuylkill Rivers and at the point where the channel to the reserve basin connects with the Schuylkill.

The CHAIRMAN. What tide do you have at Philadelphia?

Admiral STANFORD. It is from 3 to 4 knots at times.

The CHAIRMAN. And how high?

Admiral STANFORD. About 6 feet.

The CHAIRMAN. Does the tidewater come up the river that far and that high?

Admiral STANFORD. Yes, sir.

Mr. WITHERSPOON. Admiral, you said you had room there in those slips for eight vessels. A slip is the space between two piers, isn't it?

Admiral STANFORD. Yes, sir.

Mr. WITHERSPOON. How far apart are they?

Admiral STANFORD. Two hundred and fifty feet.

Mr. WITHERSPOON. Then if there is room for eight ships, how much space would that cover?

Admiral STANFORD. Three of the older type of battleships have been squeezed into one slip. Only two of the newer type could be entered.

Mr. WITHERSPOON. That is not what I am getting at. You have, you say, accommodations there for eight vessels in those slips, counting two in between?

Admiral STANFORD. Yes, sir.

Mr. WITHERSPOON. That only takes up about 1,000 feet of the sea-wall, doesn't it?

Admiral STANFORD. Yes, sir.

Mr. WITHERSPOON. Now, there is 9,000 feet in all. Why could you not utilize the balance of the 9,000 feet in building those piers?

Admiral STANFORD. The berths have been utilized to their full value. The entire water front in the back basin has been lined with vessels.

Mr. WITHERSPOON. How, then, is it that if those piers are only 250 feet apart—I do not understand how there is room for only eight vessels.

Admiral STANFORD. You asked me, sir, how many you could get in those slips. There is other frontage.

The CHAIRMAN (indicating on the plat). You notice the piers stop here, and there is this space here.

Mr. WITHERSPOON. Why could you not build piers there and utilize that sea wall?

Admiral STANFORD. It could be done, sir, and probably would be done after this other development has been completed. It is a question which is the better arrangement. If funds were unlimited, it would probably be that piers would be built on the south side of the channel, and also piers radiating—

Mr. WITHERSPOON. Does it take more money to build the piers where you already have the sea wall or to extend the sea wall and build piers there?

Admiral STANFORD. There is comparatively little difference.

Mr. WITHERSPOON. I noticed when I was there that there was a large number of vessels anchored just out in the back basin.

Admiral STANFORD. Yes, sir; because there was not sufficient sea wall to move them alongside.

Mr. WITHERSPOON. What disadvantage do they suffer by being kept there instead of in a berth?

Admiral STANFORD. There is inconvenience and loss due to the fact the vessels have to operate all their own mechanical equipment instead of utilizing the yard facilities. For instance, they can not get water from the yard mains, compressed air for turning over mechanical equipment, or electric current from the yard power plant. That means the vessels have to operate their own boilers and electric generators and maintain their mechanical force.

Mr. WITHERSPOON. Your think, then, they could be kept there at less expense for those purposes than now?

Admiral STANFORD. Undoubtedly.

Mr. WITHERSPOON. At much less expense?

Admiral STANFORD. The bureau is continually receiving requests to have yard facilities extended so as to provide heat, light, and water for use of vessels secured at the stations.

Mr. WITHERSPOON. How many more of those slips or berths do you need now?

Admiral STANFORD. I can not answer that definitely. The berthing front, is insufficient for the demands at present. Just what the demands will be increased to at a later date I can not state.

Mr. WITHERSPOON. I am not talking about the future; that is uncertain. But, just as it is now, how many more berths would you need to economically accommodate the vessels you have in reserve at this time? Can you give us an approximate idea?

Admiral STANFORD. The development of the water front has so far increased just about as rapidly as required by the reserve fleet. I do not think the yard development in this respect is far behind the needs of the fleet.

Mr. WITHERSPOON. Then, if we made this appropriation of \$50,000, would that furnish all the accommodations that economy requires should be furnished?

Admiral STANFORD. That is, for the conditions as they exist to-day?

Mr. WITHERSPOON. That is what I am talking about; those identical conditions. If those conditions should not be materially increased hereafter, that would be enough, would it?

Admiral STANFORD. I should think so; but really the most serious need of our stations is increased berthing space and improved and heavier facilities for handling heavy weights and more large docks for docking vessels. Those are the three greatest needs of the stations. There are few yards where the water front can be developed as cheaply or to the same degree as at Philadelphia, and therefore special effort is being made for its improvement.

At Boston, as stated a few minutes ago, it is almost impossible to increase the berthing front.

Portsmouth, N. H., has very limited berthing facilities, and the inspection board made most earnest recommendations that berthing facilities at that station should be very largely increased. At New York very little can be done in the way of increasing the berthing front.

Mr. LEE. Admiral, Mr. Roberts spoke of the dry dock——

The CHAIRMAN. Before we take up the dry-dock proposition let us finish these two little items.

Mr. LEE. This is in connection with what we are discussing here. Is this the channel or dry dock that the Committee on Naval Affairs recommended last year should be built, the channel between the back basin and the Delaware River? Is that the dry dock or channel that the Committee on Naval Affairs recommended?

Admiral STANFORD. That was not my understanding; I think they referred to the natural channel.

Mr. ROBERTS. You understand, Admiral, I asked you where this additional \$50,000 would be spent with reference to where the proposed new dock from the back basin to the Delaware River would come into the back basin.

Admiral STANFORD. Yes, sir.

Mr. LEE. That is the same dry dock proposition that the Naval Affairs Committee recommended should be built at League Island last year by a vote of 13 to 5?

Admiral STANFORD. Yes, sir.

Mr. LEE. How many battleships have they at Philadelphia at the present time in the back basin?

Admiral STANFORD. Twelve battleships.

Mr. LEE. How many battleships can you place in the back basin by banking them?

Mr. WITHERSPOON. Thirty-nine.

Admiral STANFORD. It is possible to care for 26 vessels by double-banking and placing 3 in each slip.

Mr. LEE. Judge Witherspoon said 39.

Admiral STANFORD. You can not get 39 in the basin now. You could enlarge it so you could.

Mr. LEE. In speaking of the entrance to the back basin, Admiral, if anything should happen to a vessel coming in or going out of the reserve basin, what would be the result in time of war?

Admiral STANFORD. You mean any accident that would cause a vessel to sink in the channel? Such accident would most effectually lock up all the vessels that might be contained in the basin until such time as the obstruction could be removed or a channel dredged around the obstruction.

Mr. LEE. In your mind, Admiral, which do you think is the most military necessity at League Island at the present time in regard to the development of the yard? Don't you think that the proposed dry dock recommended by the Naval Committee last year is the most military necessity at that yard at this time?

Admiral STANFORD. Certainly it is the facility that is most necessary to insure the successful use of the reserve basin.

Mr. LEE. How many vessels have we at the present time which, if they were taken to the reserve basin, could be repaired in the dry docks that are now at League Island?

Admiral STANFORD. There are two dry docks, the larger one of which is incapable, because of its dimensions, of receiving eight vessels which are either now built, building, or authorized.

Mr. LEE. If those vessels were put into reserve, you would have no place to repair them at Philadelphia?

Admiral STANFORD. They could not be dry-docked at the Philadelphia yard.

Mr. LEE. They will have to go into reserve sooner or later?

Admiral STANFORD. I should say so.

The CHAIRMAN. You have vessels in reserve at other yards besides Philadelphia, have you not?

Admiral STANFORD. Puget Sound is the other base for vessels in reserve.

The CHAIRMAN. When you put them in reserve, Admiral, could they not be docked at New York or Norfolk?

Admiral STANFORD. Up to the present time any vessels placed in reserve at Philadelphia have been within the capacity of the Philadelphia Dry Dock.

The CHAIRMAN. I know. But I say if they were too large for that dock they could be sent to the other places?

Admiral STANFORD. Yes, sir; except that there are not berthing facilities at the other stations sufficient for the vessels in reserve and also for those undergoing repair.

The CHAIRMAN. Well, while they were being docked they could be sent to the other yards?

Admiral STANFORD. Yes, sir.

Mr. LEE. Admiral, you spoke of enlarging one of the docks at Philadelphia—making it wider—for the purpose of having the ships that are now built or building enter that dry dock. What would be the cost of enlarging that dock?

Admiral STANFORD. My recollection is that I estimated several months ago that it would cost \$1,500,000.

Mr. LEE. Don't you think it would be a saving to the Government to build the dock as proposed in my bill and make two dry docks in one for \$3,000,000?

Admiral STANFORD. I would consider it a better business proposition, because the dry dock No. 2 in Philadelphia is now in excellent condition of repair and is excellently adapted for handling all but our largest vessels. Rather than spend as much money as \$1,500,000 to reconstruct that dock, it would seem wiser to provide an additional structure, which in all probability will be an urgent need at some later date.

The CHAIRMAN. To put the matter as a business proposition, you mean that we have need for small docks as well as for big docks, and that it is economy to dock a small ship in a small dock and a big ship in a big dock?

Admiral STANFORD. Yes, sir.

Mr. LEE. Speaking of the Schuylkill River, is it not a fact that vessels going from the Schuylkill River to the back basin require very careful handling on account of the tide?

Admiral STANFORD. Yes, sir; and on account of the narrow and tortuous channel.

Mr. LEE. Is it not a fact that the Schuylkill River furnishes a lot of silt produced by the coal mines up through the country coming down?

Admiral STANFORD. I do not know how much silt the Schuylkill River yields. I thought the dams above Philadelphia largely intercepted that silt?

Mr. LEE. No, sir; the deposits in the Schuylkill River are largely from coal dust from the collieries and mines.

The CHAIRMAN. When we were over at Philadelphia this past summer, I talked with several officers over there, and they told me that the silt from the Schuylkill River was practically nothing, and it was not on account of the deposit of the silt, but on account of that tortuous channel and the washings.

Admiral STANFORD. And the shifting of the bottom.

Mr. ROBERTS. Do you remember, Mr. Chairman, where you turn from the Delaware River into the Schuylkill, it is very shallow water and it makes a bar out there?

The CHAIRMAN. Yes.

Mr. ROBERTS. That must be a silt bar. That might come possibly from the Delaware meeting the currents of the Schuylkill and depositing on the end of the island, but you will remember there was a tongue ran away up there.

The CHAIRMAN. Yes; I know there is something of the kind there, but I was just stating what these people said to me. I inquired and they told me that the deposits of silt coming down the river was very little.

Admiral STANFORD. That was also my impression.

The CHAIRMAN. That is the information that I got there.

Now, on that subject, speaking of that tortuous channel, what would it cost to dredge out the entrance from the Schuylkill into the back basin—to dig out a straight wide channel?

Admiral STANFORD. It would cost comparatively little.

The CHAIRMAN. It is soft mud, is it not?

Admiral STANFORD. It is soft mud. The objection is that it would only be a passing condition, as a rapid shoaling would follow the dredging.

Mr. ROBERTS. Where would that shoaling come from?

Admiral STANFORD. I think it is due to a moving of the bottom deposits in the river. The bottom mud is stirred into suspension, and then, under certain conditions of the tide and current, the material is deposited in a new spot, and naturally deposits at the eddy at the confluence of the two streams.

Mr. WITHERSPOON. Admiral, I believe you stated that the dry docks at Philadelphia were sufficient to accommodate all of our ships except the eight largest?

Admiral STANFORD. Yes, sir.

Mr. WITHERSPOON. And of those eight six are incomplete at this time, are they not?

Admiral STANFORD. Two are in commission and two others are practically completed.

Mr. WITHERSPOON. Then, there are not over four at the present time that could not be accommodated at Philadelphia with the present dry docks there?

Admiral STANFORD. Yes, sir; the *Texas* and the *New York* are the two nearing completion.

Mr. WITHERSPOON. Yes; I was asking you about those that are completed.

Admiral STANFORD. Yes, sir; there are four vessels which could not enter, not including the four under construction or authorized.

Mr. WITHERSPOON. How many other dry docks have we large enough to accommodate those eight vessels authorized and now in process of construction, which you say could not get into the dry docks at Philadelphia?

Admiral STANFORD. There are three—Dry Dock No. 4, at New York; Dry Dock No. 3, at Norfolk; and Dry Dock No. 2, at Bremerton.

Mr. WITHERSPOON. What about the dry dock at Pearl Harbor?

Admiral STANFORD. That is not a dry dock at the present time. When completed that dock will have a capacity sufficient for any vessel even in contemplation.

Mr. WITHERSPOON. Are you trying to complete it?

Admiral STANFORD. It is not under active construction at this moment.

Mr. WITHERSPOON. Has it been abandoned?

Admiral STANFORD. No, sir.

Mr. ROBERTS. I suggest that we take that up as a separate matter later on.

Mr. WITHERSPOON. He has been examined about it by other members of the committee. Now, do you think it is advisable to have each navy yard supplied with a sufficient number of dry docks to accommodate the entire Navy?

Admiral STANFORD. I should say not.

Mr. WITHERSPOON. Do you think that Philadelphia is an exception and that it should have a sufficient number of dry docks to accomodate all of the ships?

Admiral STANFORD. I am of the opinion that a positive entrance to the reserve basin which can be absolutely depended upon at all times is essential for the proper use of the reserve basin. The reason that a dry dock 1,700 feet long was recommended is not because a dry dock having the length of 1,700 feet is a military necessity but because it is 1,700 feet between the basin and the Delaware River, and the dock was to have a length sufficient to connect these two bodies of water. The proposed dock would provide desirable docking facilities and at the same time furnish a positive connection between the reserve basin and the river, which is apparently the present military necessity.

Mr. WITHERSPOON. As I catch your meaning, then, the function and object and good of this proposed 1,700-foot dry dock is not the ordinary purposes of a dry dock, but to supply the defects that now exist in that basin. You need a dry dock not so much for repairing ships as to fix the basin so the ships can get in and out?

Admiral STANFORD. I consider that basin an especially valuable feature of the station. You spoke of a defect. This additional entrance is for the development of what is already a wonderful natural facility.

Mr. WITHERSPOON. You concede it is a defect that the current is such and the channel fills up so that there is danger of getting the ships all locked up in there? Is not that a defect?

Admiral STANFORD. It is an unfortunate feature.

Mr. WITHERSPOON. Call it that, then—an unfortunate feature. Then the main function of this dry dock is to better that unfortunate feature of it?

Admiral STANFORD. That would be a very important function of the proposed dry dock.

Mr. WITHERSPOON. I concede that. But that is the principal function of this proposed dry dock?

Admiral STANFORD. The dock would also provide valuable docking facilities.

Mr. WITHERSPOON. Then I do not understand your meaning.

Admiral STANFORD. The dock would be very important as a way connection between the river and basin, and would also furnish a most valuable facility, when required, in the docking and repair of vessels.

Mr. WITHERSPOON. And then you would have Philadelphia supplied with dry docks sufficient to accommodate the entire Navy?

Admiral STANFORD. The proposed dock would be large enough to receive any vessel of the Navy.

Mr. WILLIAMS. Admiral, can you get any of these larger ships—the *New York* or the *Texas*—to Philadelphia? Is the channel of the river of sufficient capacity at all times?

Admiral STANFORD. I think it is, sir.

Mr. WILLIAMS. Without expense of dredging?

Admiral STANFORD. The river from the breakwater to Philadelphia is under development by the Army and at the present time is passing some of the largest craft that are afloat.

Mr. ROBERTS. It is a 35-foot project they are working on now, is it not?

Admiral STANFORD. Thirty-five feet; yes, sir.

Mr. ROBERTS. And they are agitating for 40 or 45 feet, I think.

The CHAIRMAN. Have they got 35 or 30?

Admiral STANFORD. The controlling depth at mean low water was 30.1 feet at the end of the last fiscal year.

Mr. ROBERTS. They will have shortly a 35-foot channel.

The CHAIRMAN. Has that been authorized?

Mr. LEE. Yes. Admiral, is it not a fact that the largest battleship afloat was built right near the Philadelphia Navy Yard?

Admiral STANFORD. The largest one in commission; yes, sir.

Mr. LEE. How did that battleship ever get to sea?

The CHAIRMAN. It came out unloaded.

Mr. LEE. Is it not a fact that you can dock at Philadelphia at the present time more vessels in 10 hours than you can in 24 at any other navy yard, on account of the depth of the Delaware River at all times?

Admiral STANFORD. You mean, as compared with New York?

Mr. LEE. New York or Norfolk?

Admiral STANFORD. It would not apply to Bremerton.

Mr. LEE. I mean Norfolk and New York.

Admiral STANFORD. The channel leading to the Philadelphia yard, I think, is unquestionably in better condition than the channel leading to New York, if considered as being available under any condition of tide. The capacity of the Delaware River is greater than that of the Elizabeth River at Norfolk.

Mr. WILLIAMS. Admiral, take one of those largest battleships—the *New York* or the *Texas*—both loaded and equipped for going to sea for service; can they at all times now pass in and out without obstruction from the navy yard to the sea?

Admiral STANFORD. I think they can, but I should like to verify my opinion by getting the most recent information from the Army, which has cognizance of the improvement of the Delaware River. The Army records give a controlling depth of 30.1 feet at mean low water in the Delaware River on June 30, 1913; this depth is greater than the draft of the *New York* or *Texas*.

Mr. ROBERTS. I want to get the Admiral's views with regard to a statement he made. I understand you do not think it desirable at every active yard to be able to dock the entire fleet. Am I correct in that? I do not know just what Judge Witherspoon meant by being able to dock the entire fleet. My view is that every active yard should be equipped with a dry dock capable of taking the largest ship in the Navy. What is your view on that?

Admiral STANFORD. That would mean that Portsmouth, N. H., Charleston, S. C., Pensacola, and New Orleans would all have docks of maximum dimensions in case the two latter stations should be opened.

Mr. ROBERTS. That may be going a little too far. I refer to active yards. What I have in mind are the active yards on the Atlantic coast—Boston, New York, Philadelphia, and Norfolk. Those are the active yards where the great proportion of the repairs to battleships are being made. I think I am right.

Admiral STANFORD. Yes, sir; it would certainly equip the Navy with a most important and valuable facility if each of the principal yards should have at least one large dry dock.

Mr. ROBERTS. For the purposes of my inquiry I would assume those as the active yards. Now, what would you say with regard to equipping those yards with dry docks? Should not each of those yards have a dry dock capable of taking in the biggest ship in the Navy—as a military necessity?

Admiral STANFORD. It is certainly desirable, if funds can be obtained.

Mr. LEE. Is it not a fact, Admiral, that two of those yards at the present time have docks large enough to accommodate the largest battleship afloat or now building?

Admiral STANFORD. Yes, sir. New York and Norfolk each has a dock that will accommodate the largest vessel.

Mr. ROBERTS. Why is it necessary to duplicate in one of those yards?

Admiral STANFORD. I hesitate in answering that question, because it involves so intimately the department's policy as regards its assignment of vessels to the different yards. With a comparatively small number of vessels which require docks of the largest dimensions, it would certainly be possible to send those vessels to the yards which have large dry docks.

Mr. ROBERTS. That can be done at present without overcrowding either of those yards?

Admiral STANFORD. That could be done at present.

Mr. ROBERTS. But, as we go on building ships of a larger size you will soon reach a stage where you will overcrowd both those yards with those very big ships, won't you?

Admiral STANFORD. A possible relief to that condition would be the construction of a second or third large dry dock at the yards which now have a large dry dock.

Mr. ROBERTS. Yes; but if it is a military necessity to have one of the large docks at each of what I call the active yards, would you consider it a better military policy to put one of them into a yard that now has none? You would increase the military efficiency of that yard.

Admiral STANFORD. A large dock is, without question, a most valuable feature of any navy yard, and would constitute an important reliance of the department for the proper handling of its craft. It should be noted in connection with that statement that a large dock may be required for a long period because of some unusual repair required by one of the vessels. That was illustrated not a great while ago when the battleship *Arkansas* was injured off the south coast of Cuba and unexpectedly was sent to the New York yard and was in dock at that yard for a period of three months, during which time the routine docking schedule which had been arranged for the yard was entirely upset. Now, it is conceivable that in time of trouble a vessel might be in dock for a period of six months, nine months, or a year, and it would mean that other docks would have to be resorted to for the routine work. Ample dry-dock facilities are undoubtedly an urgent military necessity.

Mr. ROBERTS. You say that at Norfolk there is a dock capable of taking any vessel we have?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. The conditions surrounding the Elizabeth River make that not so very desirable in getting ships in and out?

Admiral STANFORD. Yes, sir; the narrow channel of the Elizabeth River in front of the Norfolk yard involves difficulties in handling large vessels at that place.

Mr. ROBERTS. Yet, if I understand you correctly, you believe in putting another one of those big docks down on that little narrow river where the conditions are not good for the dock they now have?

Admiral STANFORD. It is the policy of the department to send many of the largest vessels to the Norfolk Navy Yard. The docks which are now available at Norfolk are insufficient for the service demanded of the yard by the department.

Mr. ROBERTS. You say that is the policy of the department, but why can not the department change that policy and send some of those ships to some other yard?

The CHAIRMAN. That is a question the Secretary would settle.

Mr. ROBERTS. The distance from deep water—we will say outside the line of Capes Charles and Henlopen—to the dock in Norfolk is very nearly the same as the distance from Cape May to Philadelphia, is it not?

Admiral STANFORD. It is not as far to Norfolk from the sea as it is from the sea to Philadelphia.

Mr. ROBERTS. So that Norfolk has no advantage over Philadelphia in deciding which ships can get from the open sea to the dock. But take New York and Boston; the distance is much less from open sea to dock than at either of those places?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. There were two other items, but we will pass them over for to-day.

Mr. LEE. I want to ask the admiral a question. What will be the cost of constructing a dock at Norfolk 1,000 feet long?

Admiral STANFORD. Estimated, approximately, \$3,000,000.

Mr. LEE. What would be the cost of constructing a dry dock at Philadelphia, connecting the back basin with the Delaware River, 1,700 feet long?

Admiral STANFORD. About the same; \$3,000,000.

Mr. LEE. Then we would get at Philadelphia, if we construct a dry dock there, two dry docks in one, for practically the same money for which we could build one at Norfolk?

Admiral STANFORD. I think you can undoubtedly get a longer dock at Philadelphia for a given expenditure than at Norfolk.

Mr. LEE. Is it not a fact that, owing to the sand and gravel at Philadelphia, we can construct the 1,700-foot dry dock for \$3,000,000 or less?

Admiral STANFORD. It is a fact that the sand and gravel that you would necessarily excavate in constructing the dock at Philadelphia would be of value for use in concrete work in the dock, but that material would probably not reduce the cost of the dock much more than \$150,000 or \$200,000, as compared with the construction of a dock at Norfolk.

The principal item of expense in the construction of a dock is in the cofferdam, and in Philadelphia you would require two cofferdams, one at each end. It might be necessary to have two cofferdams for the construction of the dock at Norfolk, depending upon the location. There is one location suggested for the Norfolk dock which would

require not only cofferdams for the ends of the dock but also a cofferdam for the construction of one entire side as well; that would add materially to the expense.

Mr. LEE. In your report to the Secretary of the Navy of May 20, 1912, you make a statement that you think the dry dock at League Island could be built for \$3,000,000 or less.

Admiral STANFORD. That reference is a letter to the Secretary from Capt. Grant, and not from me.

Mr. LEE. You are of the same opinion now?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. I hope we can meet at as nearly 10.30 o'clock to-morrow as possible. We will adjourn until that hour.

Thereupon, at 12.40 o'clock p. m., the committee adjourned to meet to-morrow, Tuesday, December 16, 1913, at 10.30 o'clock, a. m.

COMMITTEE ON NAVAL AFFAIRS,
Washington, D. C., Tuesday, December 16, 1913.

The committee met this day. Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. Admiral, to return to the New York yard, I will ask you what it is estimated your paving and grading there are to cost you per square yard?

Admiral STANFORD. In the neighborhood of \$3.50 a yard.

The CHAIRMAN. How does that compare with what it has been costing in the past?

Admiral STANFORD. It is about the same.

The CHAIRMAN. Now, let us take up again the navy yard at Philadelphia. Power plant improvement; to install rotary "concreters."

Admiral STANFORD. That should be "converters."

The CHAIRMAN. It is "concreters" here.

Admiral STANFORD. It should be "converters." It is a misprint. The power plant at Philadelphia is equipped with three engine-driven direct-current generators, each having a capacity of 500 kilowatts. This capacity is found frequently insufficient for the operation of the yard, for the lighting of vessels, and for the operation of the pumping equipment of dry dock No. 2. There are also installed in the engine room two alternating-current generators, one having a capacity of 1,600 kilowatts and the other a capacity of 500 kilowatts. These generators are not operated regularly, nor at any time beyond a small part of their total capacity. To relieve the excessive load upon the direct-current generators it is proposed to install two machines which will receive current as generated by the alternating current machines and convert it to direct current, the machines to be used principally, when required, for the pumping out of dry dock No. 2, which will probably be about once a week for a period of two hours. This arrangement will result in making the engine-room generating equipment more than sufficient for the needs of the yard. In other words, the apparatus desired is an intermediary between the alternating-current and direct-current equipment, which will permit of alternating current being made into direct current, so that all generators can be utilized to meet any peak-load condition which may arise.

Mr. BATHRICK. Admiral, you started with the direct or the alternating current outfit?

Admiral STANFORD. The direct.

Mr. BATHRICK. Then you bought a 1,500-kilowatt alternating outfit?

Admiral STANFORD. Yes.

Mr. BATHRICK. I wondered why you did not buy at that time a direct-current outfit, inasmuch as you were equipped for direct current.

Admiral STANFORD. The purchase of alternating-current equipment followed the recommendation of Stone & Webster, a firm of consulting engineers, who were employed in 1904 by the Navy Department to report upon the power-plant situation at the principal navy yards on the Atlantic coast. Those experts recommended that the principal current utilized at the Philadelphia navy yard be of the alternating type.

Mr. BATHRICK. That contemplated, then, the necessity, in order to use the alternating current type, of stringing a new system of wires, did it not?

Admiral STANFORD. Not only new feeders, but also a change in the motor equipment then installed.

Mr. BATHRICK. Do you consider that a wise recommendation?

Admiral STANFORD. The principal economy resulting from the use of alternating current is in distribution. That type of current permits of generating at high voltage, distributing at high voltage, and then reducing by means of static transformers to the lower voltage required by the various motors, an arrangement which very materially reduces the cost of copper necessary for the distributing system. That is the primary reason for the recommendation of the alternating-current equipment.

Mr. BATHRICK. And now you are buying an outfit which practically consists of transformers, does it not?

Admiral STANFORD. They are in the nature of transformers; yes, sir.

Mr. BATHRICK. To transform the alternating current to direct—

Admiral STANFORD. And direct to alternating, in order that all generating equipment in the engine room may be utilized as may be required for the operation of the system.

Mr. BATHRICK. Over either system of wires?

Admiral STANFORD. Either system.

THE CHAIRMAN. Building slips, \$200,000. Will you explain about that, Admiral?

Admiral STANFORD. This item is for the purpose of constructing building slips or ways to permit of the construction at the yard of the smaller vessels required in the naval service. The slips proposed would have a capacity sufficient for building and launching vessels having a tonnage up to 16,000, and are desired in accordance with the policy of the department, which favors a moderate building program at the yards in order to utilize more uniformly the machine equipment and the force of mechanics and laborers which have to be employed at times of pressure of work and which it is advantageous to employ at all times in order to get better service.

Mr. ROBERTS. Admiral, what is included in these building slips?

Admiral STANFORD. The item covers the supporting piling or platforms upon which the vessel would be constructed; also overhead

traveling-crane equipment; and also the extension of tracks, distributing systems, and yard utilities which will be required in connection with building operations.

Mr. ROBERTS. In other words, it includes everything necessary to equip these slips for immediate building?

Admiral STANFORD. It does.

Mr. ROBERTS. There will be no appropriations required subsequently to make the slips available after they are once built?

Admiral STANFORD. No, sir; unless the slip is enlarged to provide for building larger vessels.

Mr. ROBERTS. Now, what part of the \$200,000 goes into the crane and what part into the slips?

Admiral STANFORD. It is estimated that about \$173,000 will be required for the supporting construction and foundation work and cranes, of which probably \$30,000 to \$40,000 will be required for the cranes.

Mr. ROBERTS. Now, let me ask you, Admiral, how much it would cost to put in slips with a suitable crane to build battleships of the largest size.

Admiral STANFORD. Slips sufficient for battleship construction would involve large additional expenditures to provide more conveniently located buildings and equipment which would be required for the heavy construction work.

Mr. ROBERTS. That is, if we are going to build a battleship of the heaviest type, we will have to have some buildings erected near these slips?

Admiral STANFORD. It would probably be found necessary to increase both the building and machine-tool equipment.

Mr. ROBERTS. But that does not just answer my question. What I want to know particularly is how much additional appropriation would be required for slips and a suitable crane and track and power extensions, etc. In other words, what did the building slip in New York cost, with its crane?

Admiral STANFORD. The New York building slip has been extended so many times I do not know offhand just how much it has cost to date. The estimated expenditure on account of the New York slip is between \$350,000 and \$400,000.

Mr. ROBERTS. Will you also give us in the hearings an estimate of the cost of new slips at the Philadelphia yard suitable for battleships?

Admiral STANFORD. The recommendation from the yard, which was submitted at the time Capt. Grant was commandant, asked for an appropriation of \$915,000 for the construction of two building slips, each large enough for the construction of a capital ship.

Mr. ROBERTS. Just the slips?

Admiral STANFORD. And with the accessory equipment which would be required. I have not personally gone into the details of that estimate, because it was not included to that extent by the department.

Mr. ROBERTS. I wish you would separate those items that relate to the slips, because, if I understand, Capt. Grant contemplated slips that would let him build the biggest ships. My purpose in bringing that up is this: I want to ask you another question. The crane that you would install in connection with these slips proposed here would not be heavy enough to do battleship work, would it?

Admiral STANFORD. It would be, certainly, for a portion of the work; also any other work which is contemplated in this modest program now proposed will be available to its full extent toward the development of heavier slips which may ultimately be desired.

The CHAIRMAN. Admiral, what character of ships of 16,000 tons and under are we likely to build in the future?

Admiral STANFORD. The *Maumee*, a collier, has a tonnage of about 14,500. Then there is a troop ship of about 9,500 tons for which appropriation has been made.

The CHAIRMAN. A transport?

Admiral STANFORD. A transport.

The CHAIRMAN. What probable demand will there be in the Navy for the construction of ships under 16,000 tons? In other words, if we fit this up, should it be fitted up for ships of 16,000 tons limitation or for larger ships?

Admiral STANFORD. It is my understanding that the Secretary now favors the construction of slips which will be sufficient only for the smaller vessels which will be needed, such as scout cruisers, colliers, and transports, and that the construction of the slip shall be such that it can be readily and economically extended if it should be decided at a later date to build heavier craft.

The CHAIRMAN. We are not building any scout cruisers now, are we?

Admiral STANFORD. Not at present.

The CHAIRMAN. And we have not been for years, have we?

Admiral STANFORD. No, sir.

The CHAIRMAN. We have not a large program for building colliers, have we?

Admiral STANFORD. Not to my knowledge.

The CHAIRMAN. What would be the necessity or demand for slips of this limited character as compared with the demand there might be for larger slips?

Admiral STANFORD. It is difficult for me to answer that question, because it depends so much upon the department's policy and future recommendations. I am not a member of the General Board or of the body that recommends the increase of the vessels of the Navy and I do not know just what the trend of their ideas may be in that direction, and I do not know what smaller craft might be recommended later. I am hardly in a position to answer that question, Mr. Chairman.

Mr. ROBERTS. Let me ask you this, Admiral: A smaller ship can be built on the big ways, can it not?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. For instance, at the New York yard, with its slips capable of having built on them the biggest battleship we design, you could build a torpedo boat successfully?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. But the converse is not true; you can not build a big ship on the ways designed for a little ship?

Admiral STANFORD. That is right.

Mr. WILLIAMS. Are the improvements which you recommend a part of the general scheme or plan prepared for the building and equipment of a larger Navy, or are they necessary for the maintenance and repair of the Navy we now have?

Admiral STANFORD. Building slips could not be used for the maintenance and repair of vessels now completed. Slips are necessary for new construction work.

Mr. WILLIAMS. Have we not ample facilities in our several navy yards for the construction of such new ships as may be ordered?

Admiral STANFORD. There are at present but two yards equipped with building ways—New York and Mare Island. It is the Secretary's idea, according to my understanding, that other principal yards having excellent shop buildings and equipment should be capable of constructing vessels if it should be the desire of the department.

Mr. WILLIAMS. Then, as I understand, these improvements are in anticipation of increasing the Navy?

Admiral STANFORD. And also to further utilize the facilities of the yard.

Mr. ROBERTS. Just one more question in regard to these slips. If you must have additional buildings for slips that will carry a battleship, how are you going to get along with the slips provided for here when you are going to build a ship of 15,000 or 16,000 tons? Won't you have to have some buildings in that case also?

Admiral STANFORD. Without additional buildings there would be a greater dependence upon the transporting facilities of the yard. The plates would be punched and prepared in the shops which are now in existence and then loaded upon cars and transported to the site of the work.

Mr. ROBERTS. That could be done for a battleship just as well, could it not?

Admiral STANFORD. There is a point which you reach in increasing the scope of the work where it would not be economy to depend upon longer transportation, but it would be advantageous to have more conveniently located equipment. With the handling of a comparatively small amount of material it is better to utilize the equipment which you have and spend a little more on transportation, but with an increase in the quantity of material it would be advantageous to have some of the shops nearer to the work.

The CHAIRMAN. And 15,000 or 16,000 tons of transportation would add to the cost of the estimated cost of construction, would it not?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. You are familiar with the Boston yard?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. And you recall the location of the slip upon which was built, I think, the last vessel constructed in the Boston yard?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. I was told by the commandant of the yard that that slip is more advantageously located with reference to the shops than could be found in any other yard in the country. How about that?

Admiral STANFORD. Those ways are admirably located with reference to shop buildings.

Mr. ROBERTS. And if slips were put in there, there would be no necessity for accessory buildings to make them available?

Admiral STANFORD. I should say not.

The CHAIRMAN. The next item is the navy yard, Washington, D. C., for extension of gun factory, \$450,000. Please explain about that, Admiral.

Admiral STANFORD. That item was inserted in the estimates by the department very recently for the purpose of increasing the plant to provide for the manufacture of all the guns which may be required for the naval service. There have not, to my knowledge, been any detailed or general outline plans prepared for this development. The item is a round sum inserted as probably being sufficient for the immediate demands.

The **CHAIRMAN.** So that in its present state it is a guess?

Admiral STANFORD. It is a very approximate estimate. I think probably you could get more definite information upon the project from Capt. Jones, the commandant of the Washington yard, or from the Chief of the Bureau of Ordnance.

The **CHAIRMAN.** Have any plans been drawn up for this extension?

Admiral STANFORD. The Chief of the Bureau of Ordnance was unable to give me anything definite.

The **CHAIRMAN.** You have nothing to do with the manufacture of ordnance?

Admiral STANFORD. Nothing whatever.

The **CHAIRMAN.** We will take that up with the chief of that bureau.

Mr. ROBERTS. You do not know, Admiral, in what direction they design to extend the shops?

Admiral STANFORD. To the north.

Mr. ROBERTS. Up toward the entrance?

Admiral STANFORD. Yes, sir; toward the officers' quarters.

Mr. WILLIAMS. Admiral, have these estimates been made very liberal with a view to a material cut on the part of the committee?

Admiral STANFORD. I can state positively as regards the items which we have previously considered. Those items are, as nearly as can be determined, the amounts which will actually be required.

Mr. WILLIAMS. But in the case of estimates such as this item for extending the gun factory, is that made liberal with a view of a material reduction?

Admiral STANFORD. I am unable to make any definite answer to that question, because, as I have already stated, I am not familiar with the scope or any of the details of the project. It is one which, to the best of my knowledge, has not been outlined.

The **CHAIRMAN.** The next item is a fireproof general storehouse, \$125,000. Tell us about that, Admiral.

Admiral STANFORD. To cost \$225,000.

The **CHAIRMAN.** It does not say so here. You say at a cost of—

Admiral STANFORD. A cost of \$225,000.

Mr. TALBOTT. You mean you want another appropriation?

Admiral STANFORD. Yes, sir; for a new building.

The **CHAIRMAN.** \$225,000 would make a pretty good building, would it not, Admiral?

Admiral STANFORD. Yes, sir. The item was included in last year's estimates, and I can hardly do better than refer to the hearing before the committee when it was under consideration, beginning on page 152 of last year's hearings:

This item is for the construction of a general storehouse which will permit of centralizing stores in one building centrally located, thereby reducing the cost of caring for stores, render available floor space in shop buildings which is required for shop use, but which is now used for stores, and greatly reduce the cost of shop operations by having supplies conveniently located with respect to the shops.

Subsequent statements give information as to the proposed location of the building, its general dimensions, and the character, and the use which will be made of the space which will be vacated by stores if the general storehouse should be constructed.

The CHAIRMAN. But at the present time you do have storage capacity there?

Admiral STANFORD. No, sir; various shop buildings are used in part for storage purposes.

The CHAIRMAN. And they are still operating all the machinery they have there at the shop?

Admiral STANFORD. To the best of my knowledge, they are.

Mr. ROBERTS. Where is it proposed to locate this building in the yard?

Admiral STANFORD. In Jeffers square, between buildings 78 and 28, and between Patterson and Isaac Hull Avenues.

Mr. ROBERTS. What are those tracks that run up in there, entering building 24?

Admiral STANFORD. Building 24 is a locomotive house. Building 100 is a test house. Both of those buildings would have to be removed.

Mr. ROBERTS. What is the character of construction of this proposed building?

Admiral STANFORD. Fireproof construction; structural steel and reinforced concrete.

Mr. ROBERTS. How high is it?

Admiral STANFORD. Five stories, to cover an area about 100 by 250 feet.

Mr. ROBERTS. Would that take up the space between Hull and Patterson Avenues and No. 73 and No. 10? Building 28—would it leave a street each side of it north and south?

Admiral STANFORD. It would. Good entrance facilities would be provided on both sides of the building.

Mr. ROBERTS. You would have entrances on Hull and Patterson Streets; and on the north and south would the streets be left?

Admiral STANFORD. I shall have to refer to a plan before answering that question. [After referring to the plat.] Yes, sir; there will be open space on all four sides of the building.

Mr. ROBERTS. And does that amount of \$225,000 include the interior fittings?

Admiral STANFORD. The amount should complete the building in all respects.

Mr. ROBERTS. Hoisting apparatus?

Admiral STANFORD. Yes, sir; elevators, bins, partitions, shelving, etc.

Mr. ROBERTS. Perhaps you told the chairman (and I was not paying particular attention) of the necessity for this building.

Admiral STANFORD. It is to permit the centralizing of stores now contained in various shop buildings and render them more convenient for use; also, to permit the vacating of space in shop buildings and permit of that space being used for shop purposes.

Mr. ROBERTS. How many places have they in the yard now where stores are being kept? You have a storehouse No. 2, I notice, on the east side of the park?

Admiral STANFORD. Floor space would be vacated in buildings 58, 105, and 112, which, together with small areas in various other buildings, would aggregate about 92,000 square feet. The proposed building will have a floor space about one-third greater than the areas which will be vacated.

Mr. ROBERTS. Do you think that is pressing?

Admiral STANFORD. It is urged by the Washington yard as a most urgent need.

Mr. ROBERTS. That is, next after the extension of the gun factory, I suppose?

Admiral STANFORD. At the time the building was requested the request for the gun-shop appropriation had not been submitted, and the storehouse was then the most important item. I think the request for the gun shop followed a request of the Secretary that the gun factory should have capacity sufficient to make all guns required in the service.

Mr. ROBERTS. Let me ask you, Admiral, to see how much knowledge you have of this extension of the gun factory, do you mean to improve and provide facilities for making castings?

Admiral STANFORD. There will be a large shrinking pit required.

Mr. ROBERTS. No, but for making castings. I have seen in the papers what purported to be interviews or statements from the Secretary, that he wanted this Washington yard to be fit up so that he could make castings; that he was being held up by private manufacturers.

Admiral STANFORD. There is, as you probably know, a big foundry building just being completed which will be ready for service at a very early date.

Mr. ROBERTS. Will that foundry be capable of making these steel castings they have to have for gun mounts and for guns as well?

Admiral STANFORD. It is my impression that it will have capacity for all kinds of castings.

The CHAIRMAN. We just paid \$300,000 and some odd for that foundry.

Admiral STANFORD. Yes, sir; the sum of \$200,000 was for the structure, and there was another appropriation for its equipment.

The CHAIRMAN. It is \$125,000; I remember.

Admiral STANFORD. That was under the Bureau of Ordnance.

The CHAIRMAN. Making \$325,000 for that building that is just completed.

Mr. ROBERTS. I was on a subcommittee that investigated the yard and reported on that new foundry building, and my impression is very vivid that it was recommended to us that they wanted to do the ordinary foundry work of the yard, and at that time, at least, it was not contemplated going into steel castings, such as are needed in certain stages of gun manufacture.

The CHAIRMAN. Do you remember the dimensions of that new foundry that has just been completed or is about to be completed? You can put it in the hearings.

Admiral STANFORD. I will insert it. [Insert.] The foundry building is 132 feet 9 inches wide by 404 feet 3 inches long.

The CHAIRMAN. The next item is the "Navy yard, Norfolk, Va., 150-ton crane, \$200,000." That is just to complete the appropriation that was authorized last year?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Let me ask you about that crane: What type of crane is that; is it like the crane at the Boston yard?

Admiral STANFORD. The Chief of the Bureau of Construction and Repair has been very positive in his request that the crane shall be of the floating type.

Mr. ROBERTS. I understand the floating type, but what I am getting at is, how it is operated. In other words, can it load up and swing around?

Admiral STANFORD. It will not have the rotating feature, for the reason that the money is not sufficient for the construction of a crane of that capacity of the floating type which would also have the full rotating feature.

Mr. ROBERTS. As I am at present advised, if that is the type of crane in that building at Norfolk, I am very much opposed to it, and if possible would like to see the whole thing stopped, and would consider a suitable type of crane in its place. I think members of the committee will recall that new crane we saw in Boston.

The CHAIRMAN. It seemed to be worthless.

Mr. ROBERTS. It had to be moved out in a certain position before it took up its load. It seemed to be a most cumbersome method of handling things.

The CHAIRMAN. It so impressed me when I saw it there.

Mr. TALBOTT. How far have they gone with the construction of this crane?

Admiral STANFORD. The specifications for the Norfolk crane have just been returned from the printer for revision of proof.

The CHAIRMAN. Contracts have not yet been awarded?

Admiral STANFORD. Contracts have not been awarded. You will possibly recollect that in my hearings last year I represented that the word "floating" was eliminated from the title of the appropriation; that, in view of the experience at Boston, it probably would be found desirable to construct a crane of the fixed type on the end of a pier or on some convenient portion of the water front, in order that the crane might be relieved of objectionable features which characterize the Boston crane. Such an arrangement would require the vessel to be brought to the crane instead of taking the crane to the vessel, as would be done with a floating type of crane.

Before the bureau began the preparation of plans and specifications for the Norfolk crane, it conferred with the Bureau of Construction and Repair, which will be charged with the operation of the crane, to learn the wish of that bureau; in consideration of the very positive wish of the chief constructor, the bureau proceeded with the design of a crane of the floating type but differing in many respects from the crane which has been constructed for Boston.

Recently there was a communication from the yard in which it was urged that the crane should not be of the floating type but of the fixed type.

The CHAIRMAN. The Norfolk yard, you mean?

Admiral STANFORD. Yes, sir. And the bureau, in an indorsement of recent date, sent all the papers to the department requesting instructions as to the type of crane the department desired.

Mr. ROBERTS. That opens up an interesting line of thought to me. If that crane is to be fixed on a dock, will it cost \$300,000?

Admiral STANFORD. A fixed crane with the rotating feature can be obtained for that sum.

Mr. ROBERTS. I mean if it is a fixed crane.

Admiral STANFORD. If it is of the fixed type, the rotating feature can be obtained for the sum appropriated.

Mr. ROBERTS. Would that cost \$300,000?

Admiral STANFORD. Yes, sir. The whole amount will be required or a fixed-type revolving crane having capacity of 150 tons at maximum radius and 250 tons at a lesser radius.

Mr. ROBERTS. How much would it cost, Admiral, to build a floating rotating crane of 150 tons capacity?

Admiral STANFORD. Approximately half a million dollars.

Mr. ROBERTS. Would you recommend the building of any more floating cranes of the type of that one at Boston?

Admiral STANFORD. I would not.

Mr. ROBERTS. I am glad to hear you say that; I would not vote for it.

The CHAIRMAN. I saw the one at Boston, and it looked to me like it was practically a loss of money, so far as the design was concerned, in the cumbersome way it had to be used. The officers at Boston expressed themselves very strongly that it should have been a fixed crane with a movable track—

Admiral STANFORD. And a full rotating head.

The CHAIRMAN. A rotating head, and with tracks around the slips so that the crane could move about.

Admiral STANFORD. The traveling feature, I think, would be without justification, for the reason that it is but seldom that the lifting of a weight exceeding 50 tons is necessary. The cranes that operate around the dry docks have capacity of 40 or 50 tons, which is sufficient for ordinary needs, but for handling one of the big 14-inch guns or a turret the larger crane would be required, and for the infrequent demands of this kind the vessel could economically be taken to the crane.

The CHAIRMAN. Come alongside?

Admiral STANFORD. Yes, sir; to avoid the very expensive track construction which would otherwise be required.

Mr. HENSLEY. Who has been recommending that type of crane?

Admiral STANFORD. The chairman has stated that it was recommended by officers at the Boston yard. In designing this equipment the bureau is governed very largely by the recommendations of the Bureau of Construction and Repair, which has general cognizance of Hull Division operations. The crane is designed to meet the express demands of those who use the facility.

The CHAIRMAN. The next item is a new dry dock to cost \$3,000,000, \$200,000.

Admiral STANFORD. The most important improvement needed at the Norfolk Navy Yard, and one which should be provided at the earliest possible time, is an additional dry dock of the largest dimensions. At present there is but one dry dock at the yard capable of taking all the present ships of the Navy, and even this dock is not as large as the locks of the Panama Canal, so that in time it may be inadequate. A more urgent reason for a dry dock is to increase repair facilities and to provide for such contingencies as may reasonably be expected. The most frequent mobilizations of the fleet are

in Hampton Roads, adjacent to the yard, and large ships ordinarily assigned to other yards must pass this point in proceeding to and returning from the Gulf or West Indies. In view of this central location and the use of Hampton Roads as a base of operations, there is greater possibility of unforeseen repairs being required for vessels than at any other point on the coast. Injuries to ships necessitating prompt docking are liable to occur at any time. It is also the case that such injuries may require months to repair, and thus may interrupt the docking schedule of the yard for a considerable time. While an additional large dry dock would increase the docking facilities, it would not constitute a reserve, since the present docking facilities are inadequate. An additional dock at Norfolk would also afford relief to other yards where accidents and contingencies may have to be dealt with. A seriously injured ship requiring docking will probably seek the nearest available yard, and the Norfolk Navy Yard should be equipped for such emergency work.

Mr. ROBERTS. Where is it proposed to locate that dock, Admiral, with reference to the other docks?

Admiral STANFORD. The exact location has not been determined. The board of inspection for shore stations is at work preparing a tentative scheme for the development of the Schmoele tract, including incidentally a location for the proposed new dock, but as yet their recommendations have not been submitted to the department, and there has been no exact location determined upon.

Mr. ROBERTS. It was found necessary, was it not, to dredge out on the opposite side of the Elizabeth River, opposite the present Dry Dock No. 3?

Admiral STANFORD. The width of channel is but a little over 500 feet at the present time, which renders the handling of large vessels inconvenient and difficult.

Mr. ROBERTS. And we did buy land on the opposite side?

Admiral STANFORD. You have appropriated for the purchase of the land, but the consummation of that deal has been delayed because of legal difficulties.

Mr. ROBERTS. But the purpose of buying that land is to dredge out, so we will have more water in which to turn our ships to get into the present dock?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. The present dry dock site is at right angles to the stream?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. I understand that it is the purpose in the location of the other dock to put it at an oblique angle to the stream, so that coming up it would go in obliquely instead of turning square to the stream.

Mr. ROBERTS. That has been talked about, but there is nothing definite.

The CHAIRMAN. That is what I wanted to find out, if it was the purpose to place it obliquely to the stream.

Admiral STANFORD. I would certainly recommend that the dock be located with its axis so arranged with reference to the axis of the stream as to best facilitate entering and leaving the dock. The Schmoele tract is now an undeveloped area, which will permit of any

arrangement which may be necessary to best subserve the use of the dock.

Mr. ROBERTS. The present Dock No. 3, the big dock, is the farthest removed of any of the docks from the shops, is it not?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Is there any space in that yard between the present dock and the shop buildings where you could put in this new dock, so as to bring the dock nearer the shop buildings?

Admiral STANFORD. There is not.

Mr. ROBERTS. In other words, if the big dock is authorized it has to be located still farther away?

Admiral STANFORD. Unquestionably.

Mr. ROBERTS. What does that mean in the long run?

Admiral STANFORD. It means that there will have to be a general development of the Schmoele tract.

Mr. ROBERTS. In other words, it means that buildings will have to be built up near those docks?

Admiral STANFORD. Additional buildings will probably be required, also additional paving and extension of the distributing systems to obtain best results in using the proposed dock.

It may be stated in this connection that the present yard structures are poorly arranged and poorly designed for the demands which are being made upon them. When the yard was first built they were building wooden ships, and the shops were designed and arranged particularly for the handling of those lighter draft wooden vessels. Since then there has been not only a radical change in the character of vessels but there has also been a great development in the design and construction of shops and shop equipment, and it is essential to obtain best results not only that the buildings should be properly designed and located but also that they shall have proper equipment for the work now handled.

The Norfolk yard is not an economical yard for operation, because of its antiquated character, and if it is to be an important base of the Navy, it will certainly warrant not only an expenditure for an additional dock, but also a good liberal expenditure for additional public work facilities required in connection with the dock.

The CHAIRMAN. Just at that point; I understand you that the Board on Shore Stations have been and are considering that whole question with a view to the proper development and organization of the Schmoele tract and these additional facilities that you speak of, and they have not yet submitted their report?

Admiral STANFORD. Yes, sir.

Mr. TRIBBLE. Admiral, before locating this dock, considering the width of this river—we examined that carefully when we were there—and considering the facts that you have just stated, that there must be new buildings, would it not be well to consider that magnificent water down at Hampton Roads before you locate that dock, and possibly move it to a better place with a view to building a better navy yard, with more commodious buildings, more water, and better facilities in every way?

Admiral STANFORD. I think that would be the wise policy.

Mr. TRIBBLE. That is what I think about it. We are building for the future when we build that dock there. If we have to dig out the

solid earth to make a channel for the boats to go through, I think it is a very unwise thing to do—to cut canals for boats.

Admiral STANFORD. There is a tendency in the service to adhere to that which we have, even though it is old, antiquated, and practically useless, whereas any good up-to-date commercial concern to succeed would have to condemn old plant and design and build to meet present conditions and needs. If the Congress would authorize a broad and liberal policy toward the development of two or three of the important stations, there would unquestionably be enormous sums saved ultimately. It would cost considerable to begin with, but there would afterwards be a saving every day of operation. The work that is being done at the New York yard in the construction of a battleship is costing much more than it would if buildings and facilities were arranged to suit that particular work.

The CHAIRMAN. Following the question by Mr. Tribble, is there a suitable point on the bay there, and if so, where? Have you ever given any attention to that suggestion of his? If we move the yard from the Elizabeth River and place it upon the bay, where would it be?

Admiral STANFORD. I am not in a position to recommend any alternate location at this time. It is such a radical departure and I have not given the subject consideration that would justify a specific reply.

Mr. TRIBBLE. As a matter of fact, the water is there in several places where it could be located.

Mr. HENSLEY. Admiral, you say if we could do this with respect to two or three stations, it would be a great thing for the service?

Admiral STANFORD. Yes, sir.

Mr. HENSLEY. Now, what would you contemplate doing with all the other stations? You would not hold them in their present states?

Admiral STANFORD. My suggestion that there should be a broad and liberal development of two or three bases is in accordance with the practice of the English Navy, which has developed a few stations with numerous dry docks and complete facilities. That is good business, unquestionably, and if we should do likewise we would save enormous sums in daily operations. Existing smaller stations in time of war would have great value if operated as auxiliary stations and as points from which vessels could obtain stores and depart more expeditiously than would be possible if a large fleet should depart from one or two bases.

Mr. HENSLEY. For instance, Admiral, at Charleston, S. C., they have a tremendous yard equipped for nearly all kinds of work in connection with the Navy, and perhaps one-third of that yard is being utilized.

Admiral STANFORD. You mean one-third the area of the yard?

Mr. HENSLEY. The area of the yard, the machinery in the yard, and all that. You certainly do not recommend that that machinery and all that stand there idle, do you?

Admiral STANFORD. I certainly should not.

Mr. ROBERTS. May I ask the Admiral a question or two in regard to this proposed dock? As I understood him the other day, one of the great items of expense to dry dock building is the cofferdams. Am I correct in that understanding?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Now, if you run them straight back from the water front into dry land, of course you have only one cofferdam?

Admiral STANFORD. Yes, sir; at the entrance.

Mr. ROBERTS. But if you follow along the side of a water course you have to have a cofferdam just as far as you have water along the boundaries of your dock?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. What is the proposed length of this dock?

Admiral STANFORD. Certainly not less than 1,000 feet.

Mr. ROBERTS. I wish you would indicate, if you will, Admiral, where that dock would go, roughly, on this map; that is, any possible location of it. It is to be located to the south of the present dock No. 2? You agree with that?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. It can not be located north of that; it has to be somewhere south of that and on the Schmoele tract?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Then, of course, you have to have the river as a base?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. And if you run in a thousand feet in any direction there I want to see where it would bring you.

Admiral STANFORD. It might be possible to excavate a comparatively large water area within the boundary of the Schmoele tract, somewhat similar to the water area which is within the New York navy yard.

Mr. ROBERTS. That means a cofferdam all the way around?

Admiral STANFORD. No. For instance, if you develop a basin, the dry dock could be located radiating from the center of the basin.

Mr. ROBERTS. Then, as an adjunct to the dock, you have to go and make a great big basin?

Admiral STANFORD. That sounds more serious than it really is, because the material which would be dredged to form the basin is very soft.

Mr. ROBERTS. I understand, but a basin that is going to allow you to maneuver a 500 or 600 foot ship has to be of great diameter and have a great depth of water, and you are going to have that soft mud down to a considerable depth, and that necessitates not only dredging that basin but dredging out your river as well.

Admiral STANFORD. There has been a plan tentatively prepared, known as the Doyle plan, which I am not presenting as an approved scheme, but which is a definitely outlined scheme showing a possible arrangement of structures. I might say it is one that has been prepared practically by the civil engineer at that station, who has devoted a great deal of thought and attention to the general features of the plan.

Mr. ROBERTS. Does he give an estimate of its cost?

Admiral STANFORD. I do not have it.

Mr. ROBERTS. That plan, however, contemplates dredging out of a sort of lagoon in the Schmoele tract and utilizing that?

Admiral STANFORD. The dredging of the lagoon is not an absolutely essential feature of the construction at the present time. Here is a perspective view of the Schmoele tract as it is to-day.

The dock which is outlined on this other plan is located approximately as I have indicated here.

Mr. ROBERTS. Does not that necessitate, Admiral, bulkheading a cofferdam all around it?

Admiral STANFORD. The cofferdam construction which would be required to execute the work as indicated on this plan would unquestionably be expensive.

Mr. ROBERTS. It would practically be a cofferdam all around that dock?

Admiral STANFORD. Yes, sir; it would be a cofferdam which would have a length over 1,000 feet and which would run at both ends to the solid ground. It should be noted that the plan possesses the great advantage that it would provide a dock which could be entered from both ends, which, combined with a central caisson, would practically result in providing two docks.

Mr. ROBERTS. Where do you get solid ground on this end, Admiral? This tentative plan shows that dredged out.

Admiral STANFORD. There is a marl formation underlying the site of the Norfolk yard which provides a splendid supporting base. It is found at varying depths. I can not state just what the depth is at the particular location indicated for the dock until additional borings recently authorized by the department are completed.

Mr. ROBERTS. That marl you can not take out with a suction dredge?

Admiral STANFORD. Marl can not be removed to advantage hydraulically. The marl is generally below a depth of 30 feet, with soft silt above, so that the dredging would involve, principally, the moving of easily handled material.

The CHAIRMAN. You say that is below a depth of 30 feet. What would be the depth of the dock above the sill?

Admiral STANFORD. Above the sill there should be a clear depth of at least 35 feet, and preferably 40 feet, for the Norfolk dock.

The CHAIRMAN. That is what I should suppose. You would want at least 35 feet?

Admiral STANFORD. The excavation for the construction of the dock would probably reach to a depth of 55 feet below low-tide level, which would probably require excavating some marl, but there should be comparatively little of that excavation required. My previous statement referred more particularly to the general dredging which would be required to develop a lagoon or water area in the Schmoele tract.

Mr. ROBERTS. What water have you in the Elizabeth River now?

Admiral STANFORD. There is a depth of 35 feet to the yard.

Mr. ROBERTS. And what water have you on the sill of dock No. 2?

Admiral STANFORD. I will insert that in the hearings from the dry-dock data book: Depth on the sill of dry dock No. 2 at M. H. W. is 25 feet 6½ inches; depth on the sill of dry dock No. 3 at M. H. W. is 34 feet ¾ inch.

Mr. ROBERTS. And you would have to have at least 35 feet of water from the river up to the sill of the proposed new dock?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. There should be at least that?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Admiral, how many battleships can be berthed now in the Norfolk yard? How many slips are there existing along the water front?

Admiral STANFORD. There is berthing space for about six. The berthing space is limited at the Norfolk yard.

Mr. ROBERTS. And if you are going to put in an additional big dock, that necessarily carries with it a considerable increase of berthing space in order to utilize the docks you have?

Admiral STANFORD. There should be an increase of berthing space whether the dock is constructed or not.

Mr. ROBERTS. I understand; but it becomes absolutely necessary then, in order to utilize the dock?

Admiral STANFORD. I should say it would be desirable.

Mr. ROBERTS. So the final cost of this new dock is a small item in comparison?

Mr. TALBOTT. That would hold, no matter where they could be docked?

Mr. ROBERTS. Not necessarily; at Philadelphia you have a great deal of berthing space.

The CHAIRMAN. I want to state to the committee that Mr. Holland, a Member of the House, who represents the Norfolk district has handed me a number of questions which he wanted to submit to the admiral to answer relative to this dock. He asked me about appearing before the committee and asking the questions, and I told him that we had never indulged any one that way; that the committee always asked the questions, but that I would call it to the attention of the committee and submit to the admiral his questions and let him put them in the hearing. He can answer the questions there. I told him we would allow any Member to come before the committee and make his statement, and if he thought proper to come here afterwards he would be permitted to do so.

Mr. HENSLEY. Don't you think, however, there would be more information gotten from the answers to the questions propounded by Mr. Holland if the admiral could take them now and answer them, so that if they lead to other matters those could be gone into?

The CHAIRMAN. I have looked over them, and I do not think they bring out anything very materially different from what has been brought out, but Mr. Holland represents that district and desired to submit these questions.

Mr. ROBERTS. I think it is proper enough to have the questions submitted and let the admiral answer them, but I should like the opportunity of interrogating the admiral myself if I thought it advisable.

The CHAIRMAN. Certainly you could do so.

Mr. ROBERTS. I did not want the questions and answers to go in the record without the committee having any opportunity to ask such further questions as it might think proper.

Mr. LEE. I move that the chairman of the committee ask the admiral the questions right now.

Mr. ROBERTS. Just read them into the record.

The CHAIRMAN. The first question is: Has the exact location for the proposed dry dock at Norfolk been determined?

Admiral STANFORD. No, sir.

The CHAIRMAN. Will it probably be located near the present shop buildings? If not, about how far distant from them?

Admiral STANFORD. It can not be located conveniently with reference to shop buildings; it will probably be at a distance of from a quarter to a half mile from them.

The CHAIRMAN. What additional shop buildings will be required?

Admiral STANFORD. It would probably be found desirable to construct buildings for machine work, for foundry work, for boiler work, and for ship fitters.

The CHAIRMAN. What extension of the present public-works utilities will be required?

Admiral STANFORD. It will be necessary to extend the pavement, quay wharves, sewer system, and distributing systems for the various kinds of power generators in the central power plant.

Mr. ROBERTS. Light and heat as well?

Admiral STANFORD. Light and heat are included in the above.

The CHAIRMAN. Is it not a fact that some of the buildings and some of the machinery now in use at this yard are not suitable for present industrial purposes?

Admiral STANFORD. The present station, as previously stated, was constructed primarily for the repair of wooden vessels. The buildings are antiquated and not of such character as to be most useful or economical.

The CHAIRMAN. Does the necessity for additional buildings form a strong objection to the construction of the proposed dock at Norfolk?

Admiral STANFORD. No, sir. In my opinion important additional shop buildings are very desirable, not only to provide necessary facilities, but because of the large ultimate savings which improved facilities would render possible.

The CHAIRMAN. That answers the next question, so I shall leave that out. Is there ample area at the Norfolk yard for the proposed dock and the additional structures required in connection therewith?

Admiral STANFORD. Yes, sir. The Schmoele tract, acquired several years ago, is practically undeveloped and has an area which is ample for the suggested improvements.

The CHAIRMAN. What can be done with the material which will be excavated for the construction of the dock?

Admiral STANFORD. A considerable part can be advantageously used for reclaiming lowlands and for back filling sea wall.

The CHAIRMAN. Do you consider it practicable to increase the available water front at the Norfolk yard to permit of the berthing of a sufficient number of ships to warrant the development proposed?

Admiral STANFORD. Yes, sir; the Schmoele tract now includes a considerable water area. This water area could be deepened and surrounded by a sea wall and provided with piers and docks, somewhat in the same way as the water area at the New York Navy Yard has been developed, and very materially increase berthing space and the value of the station.

The CHAIRMAN. Do you consider that the climatic conditions and the convenient location of the Norfolk yard with reference to labor and supplies render it particularly desirable for development as a naval base, and also with reference to its proximity to the sea?

Admiral STANFORD. The station is, without question, admirably located with respect to climatic conditions, labor, and material sup-

plies. There are large shipbuilding interests in the immediate vicinity of the navy yard which employ many of the trades required in navy yard operations, which tends to increase the available labor supply required for emergency demands at the navy yard.

The CHAIRMAN. And its proximity to the sea; he asks about that, too.

Admiral STANFORD. The Norfolk Navy Yard is very conveniently located with reference to Hampton Roads and the Atlantic seaboard.

The CHAIRMAN. The joint Army and Navy board advised Secretary Meyer that this station ought to be made one of the country's greatest naval bases. Do you concur in that opinion?

Admiral STANFORD. Yes, sir; the natural advantages of the station are such as, in my opinion, fully warrant such development. The 35-foot channel now leading to the station, which can be further deepened to 40 feet without prohibitive cost, is an extremely valuable feature for the navy yard.

The CHAIRMAN. Can it be made a great naval base without additional docking facilities?

Admiral STANFORD. No, sir. The present docking facilities are overtaxed.

The CHAIRMAN. Does the fact that a large dry dock is already located at Norfolk make it unnecessary to construct another at that station?

Admiral STANFORD. No, sir; for the reason that the present docks are insufficient for the docking of vessels that are now assigned to the Norfolk Navy Yard. It might also be noted that, as a business proposition it would be advisable to construct the additional dock, as all necessary accessory features, such as deep channel approach, personnel, stores, shops, and public works which are required to serve the existing large dock can without material increase also serve two or more additional docks.

It is not difficult to imagine a single dock being required for a long period to make comparatively minor repairs to the bottom of an injured vessel, but which would require many other of the station facilities. With additional docks the general facilities of the station could be utilized more fully to their capacity, with resulting economy in navy-yard operations.

The CHAIRMAN. If extensive repairs should have to be made on any ship and the large dry dock should have to be used for that purpose, could the necessary dockings then be made at that station?

Admiral STANFORD. No, sir; not the docking of capital ships, which are too large to enter Dry Dock No. 2.

The CHAIRMAN. Is it not true that ordinary common labor can be largely used in the construction of a dry dock, and is it not true that such labor can be secured at Norfolk as cheaply as elsewhere?

Admiral STANFORD. There is a great deal of common labor required in dry-dock construction, and the labor market at Norfolk is very favorable for such a supply.

The CHAIRMAN. Is it not true that experience with foundations of dry docks and other structures at the yard lead to the conviction that subsoil conditions there greatly favor the economical construction of the proposed dock on the Schmoele tract?

Admiral STANFORD. Such borings as have been made indicate that there need be no serious apprehension of foundation difficulties involved in the construction of the large dock proposed.

The CHAIRMAN. Please give your reasons, if any there are, why the proposed dock can not be constructed at as little cost at this station as elsewhere? And in giving your reasons take into consideration climatic conditions and the cheap labor it is possible to secure at this place.

Admiral STANFORD. Climatic conditions and cheap labor are favorable to economical construction. Physical difficulties depend very largely upon the location which is determined upon; if a location should be selected as indicated in the Doyle plan an enormous cofferdam would be required for the construction of one side of the dock, and the cost of the work would probably be increased by several hundred thousand dollars as compared with what its cost would be if it were located in a solid formation.

The CHAIRMAN. Would the cost of the dry dock constitute a strong objection to its construction at this station? If not, why not?

Admiral STANFORD. The estimate of \$3,000,000 is considered sufficient to cover all probable contingencies. The conditions at Norfolk are considered favorable for economical dry-dock construction.

The CHAIRMAN. Give briefly your reasons for suggesting or concurring in the recommendation that the proposed dock should be built at Norfolk at this time.

Admiral STANFORD. The department recommends the construction of the dock at Norfolk at this time; it is therefore the department's policy to utilize the Norfolk yard to such an extent as will necessitate the additional dry dock. The policy of the department is undoubtedly based upon the broad consideration of the relative needs of the different stations.

The CHAIRMAN. Do you consider the construction of the dry dock at this station a military necessity? If not, why not?

Admiral STANFORD. Yes, sir; to meet the demands of the department's policy.

The CHAIRMAN. Is it not a fact that there are more necessary dockings at Norfolk than at any other station, and will not the number of such dockings increase after the canal is in use?

Admiral STANFORD. Dockings at the different stations during the fiscal year 1913 were as follows: Portsmouth 16, Boston 54, New York 97, Philadelphia 44, Norfolk 115, Charleston 46, New Orleans 14, Mare Island 94, Puget Sound 45, Olongapo 23. The future use of the Norfolk yards depends upon the department's policy.

The CHAIRMAN. Those are the question, gentlemen, that Mr. Holland asked me to propound.

Mr. LEE. Admiral, how long does it take a battleship to go from Philadelphia to Norfolk?

Admiral STANFORD. I will insert that in the hearings.

About 24 hours at a speed of 12 knots depending upon the vessel and with favorable tides.

Mr. ROBERTS. Say at 12 knots, cruising speed.

Admiral STANFORD. About 24 hours.

Mr. LEE. I have here a map of the Norfolk yard showing the proposed location of the new dry dock. Is it not a fact that if this dry dock is built at this location here shown on this map, the department

will have to build a new navy yard around it? I should be glad to have you look at the map.

Admiral STANFORD. I am familiar with the chart.

Mr. HENSLEY. I would like to have some identification of the map so we will know where it comes from.

Admiral STANFORD. The location for the dock indicated on that map, which is a blue-print plan of the yard, is approximately the same as shown on a small chart prepared by the Doyle board, November, 1913.

The CHAIRMAN. Just permit me at this point to ask one question. I would like to know from you, Admiral, from a military standpoint and the probable needs of the Navy in the future, as Congress may be able to do so, would it be advisable to have a dock both at Norfolk and at Philadelphia?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. So that if Congress in the future, as the financial conditions may warrant, should determine to construct a dock at each of these stations, you think that the military necessities and the conditions of the two yards would justify such a dock?

Admiral STANFORD. Yes, sir.

Mr. TALBOTT. If we are to have two docks like that, ought not one of them to be down nearer the canal?

The CHAIRMAN. There is a dock under construction at the canal.

Mr. TALBOTT. Not one like this.

The CHAIRMAN. A little larger than this.

Admiral STANFORD. It is at Balboa, at the Pacific entrance.

The CHAIRMAN. They are building one right there.

Admiral STANFORD. It is now under construction.

The CHAIRMAN. It was all dug out nearly when we were there.

Mr. LEE. Admiral, is there any other location you can point to at the Norfolk Navy Yard where a battleship of the size of the Texas could get in and out of the dry dock without any interference of any kind?

Admiral STANFORD. There could be several locations, depending upon the way the Schmoele tract is developed.

Mr. LEE. In other words, you would have to dredge out what we call at Philadelphia a basin to get the battleships in and out of the proposed dock?

Admiral STANFORD. Dredge a waterway in the Schmoele tract similar to that in the New York yard is one possible method of development.

The CHAIRMAN. Was the reserve basin at Philadelphia a dredged-out basin?

Admiral STANFORD. It has been developed from a small creek or slough.

The CHAIRMAN. And it has been built across at the east end—

Admiral STANFORD. At the causeway.

The CHAIRMAN. And the other dredged out and a sea wall built around it?

Admiral STANFORD. Yes, sir.

Mr. TALBOTT. It is an artificial basin, then.

Admiral STANFORD. It is an artificial basin which has been developed from a narrow shallow channel.

Mr. LEE. Can you tell us, Admiral, what it would cost to build a dry dock in the Schmoele tract and a navy yard around it afterwards?

Admiral STANFORD. It is estimated that \$3,000,000 will be required for the dock. An estimate can not be given for other constructions until after a definite plan for development is approved.

Mr. LEE. That would give you a dry dock 1,000 feet long, and practically a new navy yard around it?

Admiral STANFORD. A dry dock 1,000 feet long and other improvements, depending upon the accepted general plan of development and authorizations.

Mr. LEE. As a matter of economy, don't you think it would be wise for the department to build at the League Island Navy Yard a dry dock which would practically give you two dry docks as large as that which you would build at Norfolk for \$3,000,000 or less. I mean in the matter of economy at this particular time, owing to the fact that we have a dry dock at Norfolk that is capable of docking the largest vessel now afloat or building.

Admiral STANFORD. Good use could undoubtedly be made of an additional modern dry dock at the Philadelphia Navy Yard; the construction of the dock would also provide a direct connection between the reserve basin and the Delaware River. But the location authorized for new docks should depend entirely upon the department's policy and requests, and in accordance with the department's recommendation the first dock should be located at Norfolk.

Mr. LEE. In view of the position that you now hold, has the department or the Secretary of the Navy asked you your views in regard to where this dry dock should be located?

Admiral STANFORD. Yes, sir; indirectly.

Mr. LEE. When you speak of the department's policy, whom do you mean? The Secretary of the Navy, or the general board?

Admiral STANFORD. I mean the Secretary of the Navy.

Mr. LEE. Has the General Board made any recommendations for a dry dock at Norfolk that you know of?

Admiral STANFORD. The recommendation of the General Board is for a dry dock, first, at Guantanamo; second, at Norfolk; third, at New York; and fourth, at Philadelphia. The recommendation for the Norfolk dock has been repeatedly urged for the past four years.

Mr. LEE. Is that this year's recommendation?

Admiral STANFORD. Yes, sir.

Mr. LEE. Mr. Padgett asked you several questions that were given to him by Mr. Holland, of Virginia, in regard to the labor market. Is it not a fact that Philadelphia is the best labor market of the two?

Admiral STANFORD. Philadelphia undoubtedly is a larger labor center than Norfolk, particularly as regards the mechanical trades.

Mr. LEE. Is it not a fact that the climatic features are practically the same?

Admiral STANFORD. They are not very different. Of course Philadelphia is about 200 miles north of Norfolk, which means that the climate should be a little more rigorous than at Norfolk.

Mr. LEE. If the distance is only 200 miles, don't you think it would be a great military need and economy at this time to locate this great dry dock at the Philadelphia Navy Yard, answering a twofold purpose, giving you an outlet from the back basin to the

Delaware River and at the same time protecting probably 20 battle-ships that might be put in reserve basin from being bottled up in case of an accident in the present narrow entrance?

Admiral STANFORD. I am not in a position to balance economic considerations against military needs as determined by departmental policy. The question at issue is one of military need, which must necessarily be expressed by the department. The department has given favor to the construction of a dock at Norfolk in preference to one at Philadelphia.

Mr. LEE. That is, the Secretary of the Navy has designated it?

Admiral STANFORD. Yes, sir.

Mr. LEE. On May 20, 1912, ex-Secretary of the Navy Meyer requested you to give to him in writing just what your opinion was in regard to the construction of the dry dock at the Philadelphia Navy Yard.

Admiral STANFORD. Under date of May 20, 1912, I submitted a statement to the Secretary of the Navy expressing my views as to the needs of the station and the desirability of constructing an additional dock at Philadelphia.

Mr. LEE. Will you kindly insert that in your hearings, the statement that you gave to Secretary Meyer?

Admiral STANFORD. The letter?

Mr. LEE. The letter; yes, sir.

Admiral STANFORD. That was printed in last year's hearings, and it might be transferred.

The CHAIRMAN. Just copy it in from last year's report to this one.

Mr. LEE. Also a letter from former Secretary Meyer indorsing the Naval Committee's action last year.

HOUSE OF REPRESENTATIVES OF THE UNITED STATES,
COMMITTEE ON NAVAL AFFAIRS,
Washington, D. C., February 21, 1913.

MY DEAR CONGRESSMAN:

In answer to your letter of the 20th instant you are correct in your statement that I advocated a 1,000-foot dry dock on both the Atlantic and Pacific coasts, and I would leave the location of this dock to the Naval Committee.

Therefore, if in the naval appropriation bill just reported to the House to-day there is a provision made by the committee for the location of a dry dock at the Philadelphia Navy Yard 1,700 feet long, connecting the back basin with the Delaware River, I take pleasure in assuring you that the committee's action will receive my support.

Faithfully yours,

G. VON L. MEYER.

Hon. R. E. LEE,
House of Representatives, Washington, D. C.

Mr. LEE. Was it not in view of this statement made by yourself and the statement made by Capt. Grant, of the Philadelphia Navy Yard, that the Secretary of the Navy, when he appeared before the Naval Committee, suggested that the Committee on Naval Affairs should be the proper parties to designate where the dry dock was to be located on the Atlantic coast?

Admiral STANFORD. I can not say, of course, just what weight my statements had with the Secretary.

Mr. LEE. Secretary Daniels has not asked you for any opinion as to where the dry dock should be located at this time?

Admiral STANFORD. No, sir; not directly.

Mr. LEE. Did you read the hearings of the Secretary before the naval committee in 1912?

Admiral STANFORD. I was familiar with them at that time.

Mr. LEE. Secretary Meyer stated when he was before the committee that he thought that it was up to the Committee on Naval Affairs to select the site of the new dry dock.

Admiral STANFORD. Yes, sir; as I recollect.

The CHAIRMAN. I just want to ask the Admiral one further question: If the dry dock were located in Philadelphia, as contemplated and as indicated by you yesterday, would it be necessary, for a proper and economical use of that dock, to build other structures and buildings, shops, etc., adjacent to it and in connection with it?

Admiral STANFORD. I should think not.

The CHAIRMAN. It would be located at a place where it would be convenient and economical for use with reference to existing shop conditions?

Mr. HENSLEY. Have you in mind Philadelphia now?

The CHAIRMAN. Yes, sir; I asked about Philadelphia.

Admiral STANFORD. The relation between shops and dry dock would not be ideal, but the distance is not such as to be prohibitive.

The CHAIRMAN. It would not necessitate other buildings—

Admiral STANFORD. The distance probably would not warrant the construction of additional buildings.

Mr. LEE. What is the distance, Admiral?

Admiral STANFORD. About 1,400 feet from the machine shop.

Mr. KELLEY. Is the comparatively small amount of work that seems to be going on at Norfolk in comparison with Philadelphia and New York due to the inferior equipment of the Norfolk Navy Yard?

Admiral STANFORD. It is probably due in part to the limited berthing space.

Mr. ROBERTS. I would like to ask the admiral with regard to this plan of the Doyle Board in 1913. As I look at the plan it seems very clear in my mind that the proposed new dry dock in Norfolk is simply the initial step in a very large proposition. As I count them, there will be 17 new buildings erected with reference to this new dry dock. Here is apparently an overhead traveling-crane arrangement on a pier between two slips, and I should judge there would be some sea wall constructed as a part of that plan, and a new coal pocket. I would like to ask if there has been any sort of estimate made to the department as to the cost of the dry dock proposed by the Doyle Board, located as here shown on this plan, and all the rest of the improvements apparently necessitated by this dock shown on this plan?

Admiral STANFORD. There has been no official report of the Doyle Board received at the bureau.

Mr. ROBERTS. Where does this come from, if it is not official?

Admiral STANFORD. The prints were sent to me informally by the public works officer to indicate his views and that of other officers at the station of a possible development of the Schmoele tract.

Mr. ROBERTS. Now, what is this Doyle Board, Admiral?

Admiral STANFORD. I do not know who the members were.

Mr. ROBERTS. What was it created for?

Admiral STANFORD. It was probably a self-created board; it was not official, to the best of my knowledge. They submitted this plan as a result of local study and experience.

Mr. ROBERTS. The Doyle mentioned here was the commandant of the yard?

Admiral STANFORD. Recently detached; yes, sir.

Mr. ROBERTS. So far as you know, there has been no official board appointed to consider the location of the proposed new dry dock at Norfolk or the desirability and the necessity of additional facilities in connection with it?

Admiral STANFORD. Except the board of inspection for shore stations, which, as I stated previously, is giving the matter consideration.

Mr. ROBERTS. And have they made any report?

Admiral STANFORD. Not yet.

Mr. ROBERTS. Are they considering not only the location of the docks, but the question of increased facilities in the way of buildings, slips, etc.?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. And they have not come to a conclusion yet?

Admiral STANFORD. They have not rendered a report giving a recommendation.

Mr. HENSLEY. I should like to ask two or three questions. What is the necessity for an additional dry dock at this time?

Admiral STANFORD. There are but two docks on this coast and one on the west coast having dimensions sufficient to receive eight vessels which are either built or building. Future battleships will probably have capital dimensions and add correspondingly to the eight which can not now get into the present docks. In the case of trouble it is easily conceivable that these docks might be tied up for an indefinite period because of repairs required by three vessels, leaving the other large vessels without any base for repairs.

Mr. HENSLEY. Is not the New York Dry Dock large enough to berth any of the present battleships?

Admiral STANFORD. That is one of the two large docks on this coast. Norfolk is the second.

Mr. HENSLEY. And another one will be completed at Panama.

Admiral STANFORD. No; the third one is at Puget Sound; that is completed.

Mr. HENSLEY. And there is one now under construction at Panama?

Admiral STANFORD. Yes, sir; at the Pacific entrance to the canal under construction.

Mr. HENSLEY. So there are three large dry docks on the Atlantic?

Admiral STANFORD. Two.

The CHAIRMAN. Two on the Atlantic, one on the Pacific, and one at the mouth of the Canal.

Mr. HENSLEY. Do you mean to say that there is a pressing need for two additional dry docks, Admiral, at this time?

Admiral STANFORD. Yes, sir; considering that it will take four and possibly five or six years for their construction. In that time there will probably be a considerable addition to the fleet, and if these vessels are to be assured the care that they will require in time of warfare—

Mr. HENSLEY. You anticipate that?

Admiral STANFORD. Yes, sir.

Mr. HENSLEY. All the time?

Admiral STANFORD. All the time. If these vessels are to be assured that care we must have additional docks. I can not help feel-

ing that there is no more urgent need for the Navy to-day than increased docking facilities. We are lamentably weak in that respect.

Mr. Hensley, when it comes to shop work you could in time of emergency depend upon commercial plants, but there are no commercial plants having these enormous dry docks.

Mr. ROBERTS. Let me make a suggestion right there, Admiral. I do not know whether you are aware of it, but the port directors at Boston are proceeding now with a big dry dock, as big as any of the country, which will be available when completed for any class of ships.

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. And New York, I understand, is also moving in the same direction.

Admiral STANFORD. Yes, sir; and there is also one under construction at Quebec.

Mr. ROBERTS. And they are pressing one at San Francisco.

Admiral STANFORD. There is one proposed by the Union Works at San Francisco.

Mr. WILLIAMS. In case of hostilities which may possibly occur on the Pacific, would one or more dry docks on the Atlantic of the dimensions named be used as emergency docks?

Admiral STANFORD. They would be far less valuable for that purpose than docks on the Pacific coast.

Mr. WILLIAMS. Then, the docks contemplated on the Atlantic would only be of use in case of hostilities on the Atlantic?

Admiral STANFORD. And for the regular care of vessels assigned to the Atlantic Squadron?

Mr. FARR. Are they needed to-day, Admiral? You said awhile ago that we could use two dry docks to advantage, one at Norfolk and the other at Philadelphia?

Admiral STANFORD. Yes, sir.

Mr. FARR. And a dry dock at Philadelphia and the extension contemplated at Norfolk would be useful to-day?

Admiral STANFORD. Yes, sir; undoubtedly. Additional docks are urgently needed. The two docks at Norfolk and New York have a capacity probably sufficient for the care of the eight large vessels in time of peace, but general docking facilities are very inadequate.

Mr. LEE. That would not happen at Philadelphia if you built the proposed 1,700-foot dock. If the *Arkansas* had gone to Philadelphia a year ago to dock and you had the new dock this committee voted for you could put two vessels in it at one time. As a matter of military need and economy, don't you think it would be wise to build a 1,700-foot dry dock at Philadelphia for \$3,000,000 instead of putting in a lot of money at Norfolk, where it would practically cost \$6,000,000 before you got through with the dry dock?

Admiral STANFORD. Military need should be the governing factor rather than economy.

NAVY YARD, CHARLESTON, S. C.

The CHAIRMAN. This word "toward" should be "to complete." We authorized \$300,000 last year for torpedo-boat berths.

The next item is "Dredging, to continue, \$10,000." What dredging is that, Admiral? Is that in front of the dock, or is it additional?

Admiral STANFORD. In front of the dock primarily.

The CHAIRMAN. That fills up every year. Is there any improvement in that condition?

Admiral STANFORD. No, except that we now have a dredge, which permits of correcting the trouble when it arises. The dredge has been completed and operates, using electric current from the yard power plant. The dredge can be used as frequently and as long as may be necessary to counteract the silting tendency.

The CHAIRMAN. What is it going to cost a year to keep the mouth of that dock open?

Admiral STANFORD. That depends very largely upon the depth maintained.

The CHAIRMAN. To keep it down to its capacity.

Admiral STANFORD. To maintain a depth of 25 to 30 feet would cost probably \$50,000 to \$75,000 a year, whereas to maintain a depth of 14 to 16 feet, necessary for torpedo craft, which are principally stationed at the Charleston yard, would probably not require over a quarter or a sixth of that amount.

The CHAIRMAN. So it is going to cost \$12,000 or \$15,000 a year to keep the silt away from the mouth of that dock, even down to the depth required by torpedo?

Admiral STANFORD. Yes; and to maintain necessary depths alongside of the piers.

The CHAIRMAN. Let me ask you, Admiral, is it feasible to build a wall out from there into the current and divert that silt around the mouth of that dock? If we are to pay from \$10,000 to \$50,000 a year to keep the mouth of that dock open, is there not some way that you can put some permanent wall there?

Admiral STANFORD. I have outlined three or four different methods by which the silting tendency could be corrected. The cheapest would involve an expenditure of about \$1,000,000.

The CHAIRMAN. Then what is that?

Admiral STANFORD. That would be to lengthen the dock or to build some kind of cofferdam construction in front of it. The water of the Cooper River carries sediment which quickly deposits when the water is brought to a condition of quiescence; twice a day the incoming tide charged with silt raises the level of the water on the area in front of the dry dock from 5 to 6 feet, and the current velocity being checked on this area causes the deposit of the sediment which had been carried in suspension.

The CHAIRMAN. Right there at the mouth of the dock?

Admiral STANFORD. Yes, sir; at the mouth of the dock. You have a normal quiescent condition. The quiescent condition in the little bight at the dock entrance favors the deposit of the sediment carried in suspension by the flood waters.

The CHAIRMAN. That silt would fall into and fill up the dock itself if you did not keep the gate closed, would it not?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. How far does that deposit extend out into the current of the stream?

Admiral STANFORD. The point of greatest deposit is about 200 feet from the caisson, or about 500 feet inward from natural deep water.

The CHAIRMAN. It extends a distance of 200 feet?

Admiral STANFORD. That is the point that shoals to the greatest degree. The bight in front of the dry dock is about 700 feet long and the shoaling increases from the contour of natural deep water

in the Cooper River to a point 500 feet inward, or to within about 200 feet of the caisson.

The CHAIRMAN. Now, if you did not do any dredging at all at the place where this dredging occurs, what would be the result? Would it form a bar that would appear above the surface?

Admiral STANFORD. In a period of about 18 months the water has shoaled from a depth of approximately 30 feet to a depth of about 7 feet, when dredging operations were conducted.

The CHAIRMAN. I said if you did not dredge at all.

Admiral STANFORD. If we did not dredge at all the shoal spot would probably rise still higher and approach low-tide level.

Mr. ROBERTS. Is it not feasible to haul out these torpedo boats on marine railways?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Would it not be economical to stop that dredging and all that work to keep that dry dock open, and put in some marine railways to haul these torpedo boats out on? Marine railways are not an expensive construction.

Admiral STANFORD. There are frequently several torpedo boats in the dock at one time.

Mr. ROBERTS. They could have a battery of those railways. The same power would haul them all out.

Admiral STANFORD. Yes; but it would cost considerable. The cradles are expensive and would have to be designed in such a way that vessels would be raised from the water on a level keel.

Mr. ESTOPINAL. Would not that require dredging just the same?

Admiral STANFORD. Very little dredging is required for torpedo craft, as they only draw 11 to 12 feet of water.

Mr. ESTOPINAL. You say that to keep it down 11 or 12 feet would cost about \$10,000 or \$15,000.

Admiral STANFORD. Yes, sir; principally for dredging in the entrance to the dry dock.

Mr. ESTOPINAL. But if you put them up on these cradles they would be lifted up to such a height that it would be very inconvenient working on them?

Admiral STANFORD. It is not nearly as convenient to work upon a vessel in a cradle as in a dock.

Mr. LEE. I should like to have inserted in the record a letter from Capt. Grant, of the Philadelphia Navy Yard, of May 27, 1912.

The CHAIRMAN. Just hand it to the stenographer.

COPY OF FIRST INDORSEMENT OF CAPT. A. W. GRANT, UNITED STATES NAVY, ON LETTER OF H. R. STANFORD, UNITED STATES NAVY, CHIEF OF BUREAU OF YARDS AND DOCKS, DATED MAY 20, 1912.

[First indorsement.]

MAY 27, 1912.

No. 1105.

From: Commandant, navy yard, Philadelphia, Pa.

To: The Secretary of the Navy.

Subject: Additional dry dock, navy yard, Philadelphia, Pa.

1. With relation to the above-mentioned subject the following additional facts are submitted:

2. To show the yard's capacity in number of vessels that may be cared for it may be stated that at present there are berths on the Delaware water front of the navy yard for six battleships, and upon the completion of Pier No. 5 there will be two additional, or eight in all. There are at present in the reserve basin single berths for 14 battleships, and of this number 7 of the berths may be occupied by vessels lying double or treble banked.

3. In addition to the above, 12 battleships can be moored in the river abreast of the navy yard and Fort Mifflin. The river channel opposite the navy yard, about one-half mile in width, favors the handling of vessels at any stage of the tide.

4. This anchorage in front of the navy yard favors quick berthing and unberthing of vessels alongside of piers and permits of the movement to and from the sea of battleships in divisions or squadrons. This advantage is illustrated by the fact that a squadron of 8 vessels arriving off the breakwater at approximately low water can reach the navy yard in about 7 or 8 hours, and the entire 8 vessels be berthed by using 2 tugs only in about 4 hours more time, or in 12 hours from the time of arrival off the Delaware.

5. Frequently mention is made of the depth of water in the Delaware as being an argument against the port, etc. All such arguments may be answered by the fact that merchant vessels of the American, Italian, and Hamburg-American steamship lines regularly visit Philadelphia. They are more than 500 feet long and draw in excess of 28 feet. The *Graf-Wuldersee*, 561 feet long, drew 28 feet 2 inches on her latest trip when she left port. During the past 30 days 6 vessels, drawing from 28 feet 2 inches to 29 feet, have left the port and gone direct to sea.

6. One of the most pressing and urgent arguments for the construction of the dry dock from the reserve basin to the Delaware River lies in the fact that it will produce a channel of known width and depth to and from the reserve basin. The present entrance from the Delaware takes a course about one-half mile long through the mouth of the Schuylkill River, thence via a curved channel into the reserve basin. The Schuylkill River rapidly silts. In January, 1910, the depth was dredged to 30 feet. In August of that year it had silted in one spot, which was later dredged clear. At present the mouth of the Schuylkill has filled up about 4 feet and was so reported to me in a letter from the director of wharves, docks, and ferries of the city of Philadelphia. The city expects to begin the operation of dredging the mouth of the Schuylkill July 1 of this year. Any small obstruction in this channel would tie up the Government's entire reserve fleet for an unknown period of time. An instance in illustration is here given: In January or February during the past winter a coal barge was sunk in the Schuylkill River off the elevator at Girard Point. Its location was not determined. On the afternoon of April 24, 1912, engineers belonging to the department of wharves, docks, and ferries of the city were making a survey of the mouth of the river when the armored cruiser *Tennessee* was passing through the Schuylkill into the reserve basin. After she passed part of a hulk of a vessel was discovered in mid-channel and the remainder of the hulk was located in the Schuylkill and removed.

STRATEGIC POSITION.

7. Mention is frequently made of the military strategic value of navy yard locations near Hatteras and Cape Cod. In the development of inland waterways, and in line with other great commercial undertakings, it may well be expected that in the near future the further development of the Delaware and Raritan Canal and the Delaware and Chesapeake Canal will place Philadelphia in ocean communication for large vessels via these routes, which will give the navy yard three routes to the sea, which can not be equaled by any other location on the Atlantic coast.

8. In building such a structure as this dock, and to eliminate the first cost and upkeep of a floating derrick, it has been contemplated to lay on the east side of the foundations of the proposed dock the necessary foundation to carry a traveling swinging crane capable of taking weights of 150 tons from a vessel in the dock and landing them on the dock.

COST.

9. The present dry dock at this yard is approximately one-half the length of the proposed dock, and it cost less than \$1,500,000. With the plant on hand for the construction, it is confidently believed that the proposed dock, although slightly larger in other dimensions, can be built for \$3,000,000. This would include the foundation and track for the traveling crane. With this construction the Government would be saving the first cost and upkeep of the floating crane mentioned in the preceding paragraph.

A. W. GRANT.

The CHAIRMAN. Sewer system extensions, \$5,000.

Admiral STANFORD. The yard dredge is of the hydraulic type and deposits its dredged material onto the low lands of the yard. These deposits make it necessary that the sewer system shall be extended so that they may discharge into the sea.

The CHAIRMAN. To run beyond their present terminus?

Admiral STANFORD. Yes, sir.

Mr. ROBERTS. Is this likely to be continuous, or not?

Admiral STANFORD. There will be a certain amount of dredging regularly required at that station.

Mr. ROBERTS. I mean the sewer situation. Does this carry it out beyond all possibility of filling in?

Admiral STANFORD. It is proposed to carry the sewers to the line of sea wall. There is no economy in extending the sewers before the dredging is begun, because the depositing of dredged material would be apt to displace them. After the ground has been filled in to a certain level the extensions can be built in solid ground.

The CHAIRMAN. Why could not that sewer extension be taken care of under your appropriation "Maintenance of repair and preservation"?

Admiral STANFORD. Because "repair," as I understand the meaning of the word, means to keep in condition something that is, and not to construct something new; and "maintenance" means to maintain something that is.

The CHAIRMAN. Couldn't you do it under "Maintenance" or "Repair and preservation"?

Admiral STANFORD. That has been done in the past, and it is to avoid the use of the funds under "Maintenance" and "Repair and preservation" that the extension of the appropriation "Contingent" is recommended, with the provision that that appropriation shall provide for minor extensions and alterations.

The CHAIRMAN. That brings me to the point I was coming to. Under "Contingent" on page 41 we put in the words "and minor extensions and improvements to public works at navy yards and stations," and an increase of \$20,000 in the appropriation is asked for. Could not that be taken care of under that increase there, and leave it out over here?

Admiral STANFORD. That increase of \$20,000 is going to prove very insufficient for the very numerous items of work. I think that this comparatively minor extension of sewers should under normal conditions be cared for from funds under the appropriation "Contingent," but if it is, the amount of the contingent appropriation must be made sufficiently large.

The CHAIRMAN. Conduit system, extensions, to continue, \$5,000.

Admiral STANFORD. That is principally for the purpose of putting more of the overhead wires under ground.

The CHAIRMAN. How are they getting along now overhead? All of them down in my country are overhead.

Admiral STANFORD. They have now a very heavy overhead pole system; the poles decay quickly and it costs a good deal of money to replace a decayed pole which carries many crossarms. For the appearance of the station and also to reduce expense of repair it is desired to get the cables underground. Once underground they are there for good.

Mr. ROBERTS. What is the total cost of putting the conduit system underground?

Admiral STANFORD. I should think that \$5,000 would cover it. Of course, as the yard extends it may be necessary to increase the cable system.

The CHAIRMAN. At the Mare Island Navy Yard, reconstructing quay wall. Is that the wall that was pushed out on account of the earthquake and the foundations of that building that was put up there?

Admiral STANFORD. No, sir. That was the wall that yielded when back filling was deposited hydraulically—a great quantity of liquid material—incident to the completion of Dry Dock No. 2.

The CHAIRMAN. Dry Dock No. 2 interfered with one of your buildings there, too?

Admiral STANFORD. Yes, sir.

Mr. STEPHENS. As I understand it, there has already been \$20,000 appropriated for this very purpose and \$40,000 only is needed.

Admiral STANFORD. Yes, sir. There was a request for \$40,000 last year and the amount was cut in two, and this \$20,000 is to complete the amount of \$40,000 which was originally estimated.

The CHAIRMAN. Modernizing electric power and lighting distribution. You want \$10,000 additional. We gave you \$20,000 last year.

Admiral STANFORD. The yard requested \$40,000 for that work last year; half of the amount was appropriated. There is a great deal of work required in connection with the electric distributing system. Several years ago, when current was first obtained from commercial sources, it was delivered to the yard at 1,100 volts. The central power plant and distributing system is now operated at 2,300 volts, and the cable must be more heavily insulated for the higher voltage. Further, the electric system is being augmented and modified as required by the consolidation of shops, and it is very necessary to continue the work of improving the underground electric system.

The CHAIRMAN. The next item, \$207,000, is the remainder of the \$507,000 that we appropriated some years ago. That is for dredging and diking up to the Mare Island Navy Yard.

Admiral STANFORD. Yes, sir. There is a question in my mind as to whether \$207,000 is the entire remainder of the authorization which appropriated \$300,000 and authorized \$507,000. The wording is such as to possibly mean a total of \$807,000, but this item of \$207,000 is to complete the amount to \$507,000.

Mr. ROBERTS. Will this complete the dredging?

Admiral STANFORD. It will complete the dredging which is now under contract and which is now desired by the Secretary of the Navy.

Mr. ROBERTS. Do you want any more after that?

The CHAIRMAN. Not under that contract.

Mr. ROBERTS. I mean under that project.

Admiral STANFORD. That depends upon the department's policy. The present contract provides for a depth of 30 feet from the Carquinez Straits to the navy yard.

Mr. ROBERTS. Let me get at it in another way. Contracts already existing cover the whole project?

Admiral STANFORD. Cover the dredging from Carquinez Straits to the yard; yes, sir.

Mr. ROBERTS. That was the whole project?

Admiral STANFORD. The project originally involved the construction of dikes.

The CHAIRMAN. This appropriation was \$800,000 and some odd, and the other was paid out of rivers and harbors.

Mr. ROBERTS. I am speaking about the projects that are mentioned in these different acts.

The CHAIRMAN. This completes that.

Admiral STANFORD. The appropriation now requested will complete dredging work which is now under contract to provide a width of channel of 600 feet and a depth of 30 feet.

The CHAIRMAN. Dredging and diking, to continue, \$20,000. What is that dredging or diking? Is that just more of that same work?

Admiral STANFORD. The Biddle Board, which recommended the dredging which is now in progress, estimated that there would be an amount of \$70,000 required each year to maintain the channel. This item of \$20,000 is requested for the removal of deposits which will probably form in the channel and along the sea wall. It is hoped that the amount of \$70,000, which was estimated several years ago, will not be required, but that the dikes and retaining walls will work to such advantage that a channel will normally be maintained much deeper than was then contemplated.

The CHAIRMAN. On \$20,000 instead of \$70,000?

Admiral STANFORD. Yes, sir; effort will be made to maintain the channel for \$20,000.

The CHAIRMAN. Navy yard, Puget Sound, \$155,000, is the remainder of the authorization of last year.

Mr. ROBERTS. "To complete" ought to be put in there. And should not there be the word "building" or something of that kind in there?

The CHAIRMAN. We can see how it read in the last act.

Admiral STANFORD. I think that is the phraseology of the original act. The building is under contract, and we are going to get a beautiful building.

The CHAIRMAN. This \$155,000 will complete it?

Admiral STANFORD. Yes, sir; with all of its necessary accessories, such as foreman's room, toilets, heating, lighting, water, and everything that goes to the completion of the structure, with the exception of overhead cranes, which will be provided by the manufacturing divisions.

The CHAIRMAN. You said you would get a beautiful building. Will it be useful as well as beautiful?

Admiral STANFORD. Yes, sir; it will be beautiful from the engineering point of view.

Mr. ROBERTS. The utilitarian point of view, and not the architectural.

(Thereupon at 1.10 o'clock p. m. the committee adjourned to meet to-morrow, Wednesday, December 17, 1913, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Wednesday, December 17, 1913.

The committee this day met, Hon. Lemuel E. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL STANFORD, CHIEF BUREAU
 OF YARDS AND DOCKS—Continued.**

The CHAIRMAN. Admiral, the first item is, "Naval station, Narragansett Bay, Rhode Island: Water-front improvements, \$10,000." As I recall, several years ago—perhaps a couple of years ago—a request was made for an appropriation of \$40,000 for the purchase of land and to make some water-front improvements there, and the representation was made to us that if we would grant the \$40,000 it would buy the land and make all the water-front improvements needed. Why do we have this \$10,000 estimate now?

Admiral STANFORD. The expenditure of \$40,000 included in the last appropriation bill has not been arranged as yet by the Navy Department. It is my understanding that the department at present does not favor this purchase and has not proceeded with its consummation. The amount that is included in this estimate of \$10,000 is for the purpose of increasing the landing-float facilities at the Government landing on the Newport side of the bay. At present there are only two landing floats, which are found inadequate when the fleet is assembled at Newport, and it is desired with the \$10,000 which is now requested to add from two to four floats to those already in place, together with the necessary pier extensions, and also to provide some strengthening to the sea wall which now fronts the property.

The CHAIRMAN. Did not the appropriation that was made of \$40,000 include the improvement of the water front?

Admiral STANFORD. It is my understanding that the improvement of water front which was contemplated was limited to actual sea-wall protection for the area to be purchased, which has a comparatively short water frontage, but considerable depth normal to the water front.

The CHAIRMAN. The next item is, "Naval station, Guantanamo, Cuba: Quarters for civilian employees, \$8,000." What kind of quarters are those to be?

Admiral STANFORD. Two double sets of quarters for married civilian employees are desired at Guantanamo for the use of skilled employees whose presence upon the station is desirable for its operation. There are no accommodations available in the vicinity of the station which would be suitable for these skilled men.

The CHAIRMAN. At Guantanamo there are no improvements of any kind, except what the Government has put there?

Admiral STANFORD. None at all.

The CHAIRMAN. How many will these quarters accommodate?

Admiral STANFORD. Two double sets; that would be four families.

The CHAIRMAN. They would accommodate four families?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. What class of civilian employees would occupy them?

Admiral STANFORD. I presume they would be occupied by the electrician in charge of power-plant operations, by a foreman machin-

ist, a foreman shipwright, and by some other principal foremen who would ordinarily be required in the operation of the station.

The CHAIRMAN. Do you have civilian employees of those grades which you have just mentioned?

Admiral STANFORD. I doubt if they are all employed upon the station at the present time, for the reason that the shop buildings are just being equipped with machinery.

The CHAIRMAN. Will it be necessary to have them?

Admiral STANFORD. It will be.

The CHAIRMAN. The next item is, "Recreation building for enlisted men, \$30,000." Is that the same item that was submitted last year?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Please state in a general way the necessity, reasons, and purposes of that appropriation.

Admiral STANFORD. It is to construct a building which will contain billiard tables, bowling alleys, reading rooms, and general recreation rooms which will be a place of rest or for the men attached to the fleet when they are given shore liberty. There are no facilities of such a character now available.

The CHAIRMAN. Are there any facilities there available for the enlisted men?

Admiral STANFORD. No, sir; except for football, baseball, and such sports as can be conducted out of doors.

The CHAIRMAN. But indoors?

Admiral STANFORD. No, sir.

The CHAIRMAN. About how many men are with the fleet at Guantanamo during the winter season, when the practice is going on?

Admiral STANFORD. I will have to insert that; about 8,000 men this year.

The CHAIRMAN. My recollection is that it was stated last year that there are some 15,000 or 16,000.

Admiral STANFORD. I have been informed that the fleet which will probably be sent to Guantanamo will be smaller this year than it was last year.

The CHAIRMAN. What will be the relative accommodations provided by two buildings each of which would cost \$30,000, one to be of temporary construction consisting of wooden frame, wooden siding, and corrugated-iron roof covering, and the other of permanent construction consisting of concrete walls and roof covered with asbestos shingles or similar material?

Admiral STANFORD. It is estimated that a building of temporary construction which would cost \$30,000 would have an interior floor area of approximately 10,500 square feet with a porch area of about 7,000 square feet, or a total of 17,500 square feet; whereas a building of permanent type would have an interior floor area of about 6,875 square feet with a porch area of about 6,155 square feet, or a total of 13,030 square feet. In either structure it is proposed that the porch floors would be constructed of concrete, inasmuch as the deterioration of the wooden flooring would be very rapid.

The CHAIRMAN. The next item is, "Naval station, Pearl Harbor, Hawaii, water-front development, \$100,000." Is that a part of the general scheme and program that was outlined originally in the \$10,000,000 project?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. That is within the limit that was provided?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. What have you to say in reference to the water-front improvement; where is it to be, etc.?

Admiral STANFORD. The improvement would extend along the water front in the vicinity of the shop buildings, beginning at a point near the abutment of the dry dock. It will provide the berthing space necessary to permit vessels to come alongside, and is desirable to facilitate the passing back and forth of employees performing work of repair.

The CHAIRMAN. This is a part of the original scheme that was outlined and adopted heretofore?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. The next item is, "Four officers' quarters, \$20,000."

Admiral STANFORD. That item was not included in the original scheme and has not been requested heretofore. It is to provide four sets of junior officers' quarters, and is especially desirable in view of the great distance of the station from Honolulu and the fact that there are no living accommodations in the vicinity of the station nearer than Honolulu.

Mr. STEPHENS. What is the distance?

Admiral STANFORD. About 8 miles. If these officers are to be of any real value in the operation of the station in time of emergency, they should live at least conveniently close to the station.

Mr. STEPHENS. What means of transportation are there?

Admiral STANFORD. The Oahu Land & Railroad Co. operates trains from Honolulu on a two or three hour schedule, which pass very near the entrance to the station. The company operating the electric lines in Honolulu contemplate extending their line to reach to the station and to Fort Kamehameha, which is a little farther distant from Honolulu than the naval station.

The CHAIRMAN. The station is on an island, about how far from the mainland?

Admiral STANFORD. It is not necessary to cross any water to reach the naval station from Honolulu.

Mr. KELLEY. I notice that there was an item of two officers' quarters, at \$24,000, and now there is an item of four officers' quarters, at \$20,000. What is the difference?

Admiral STANFORD. Small quarters are desired for junior or warrant officers, who are not entitled by commutation rules to as many rooms as the senior officers which the other quarters are intended to accommodate.

Mr. HENSLEY. I had an idea also, Mr. Chairman, that Pearl Harbor was on an island. Admiral, please describe it and tell us as much about it as possible.

Admiral STANFORD. Here is the station [indicating]; Honolulu is over in this direction about 8 miles [indicating]; the railroad passes here [indicating]. It is not necessary to cross the water to reach the station from Honolulu.

The CHAIRMAN. There is a point which juts out here, and I was under the impression that it was on this point [indicating] near the water.

Admiral STANFORD. The water-front development is planned to extend about like that [indicating], and here [indicating] will be the torpedo-boat piers and the building ways.

The CHAIRMAN. I was under the impression that the dock was where you were going to have the torpedo piers?

Admiral STANFORD. The dock is in that little bight [indicating].

Mr. WILLIAMS. What character of inlet is that?

Admiral STANFORD. The entrance has been dredged to a depth of 35 feet at a cost of about \$3,500,000. That portion of the work was completed nearly two years ago.

Mr. WILLIAMS. About what is the width?

Admiral STANFORD. Nearly 600 feet in the narrow stretches and it widens at the curves.

Mr. STEPHENS. Why has it been dredged to 35 feet?

Admiral STANFORD. To provide for the contingency of a vessel arriving in a crippled condition and drawing more water than normally.

Mr. STEPHENS. Are there not vessels going in there now drawing more than 30 feet?

Admiral STANFORD. No, sir.

Mr. STEPHENS. Do not some of the foreign steamers when fully laden draw more than 30 feet?

Admiral STANFORD. I think not, because of the difficulty of getting into the harbor at San Francisco, where the entrance bar has little more than that depth of water over it at times.

Mr. STEPHENS. The *Manchuria* and her sister vessel are built to draw 35 feet?

Admiral STANFORD. But under normal conditions they may not be loaded to maximum draft.

Mr. STEPHENS. I think when laden for San Francisco they would not draw that much water.

Admiral STANFORD. Pearl Harbor is not the same as Honolulu Harbor; the full cost of the dredging work to the naval station has been accomplished, using Government funds for the development of the station.

The CHAIRMAN. This is 8 miles from Honolulu.

Mr. STEPHENS. How long does it take to get from Honolulu to the naval station by rail?

Admiral STANFORD. About 35 or 40 minutes.

Mr. HENSLEY. What is the distance from the naval station to American territory, the first land?

Admiral STANFORD. About 2,000 miles.

Mr. HENSLEY. What point do you reach first?

Admiral STANFORD. San Francisco.

The CHAIRMAN. It is 2,100 miles.

Mr. STEPHENS. Do you know the depth that the channel is dredged that reaches to the commercial part of Honolulu where foreign vessels would enter?

Admiral STANFORD. I can not say offhand; I can insert that information in the record.

Mr. STEPHENS. If you will, please.

NOTE.—The chart shows a depth of 33 feet to Honolulu.

Mr. BROWNING. Can you maintain that depth of 35 feet without continual appropriations?

Admiral STANFORD. It is not probable that there will be deposits in that channel, as the water is clear and the bottom is comparatively stable.

The CHAIRMAN. The dredging was out of hard coral?

Admiral STANFORD. A large part was. At a later date the committee may be requested to appropriate more money for dredging at the entrance, where the depth over the bar is 35 feet, the same as in the main channel, to provide for heavy wave action.

The CHAIRMAN. The next item is, "Torpedo-boat slips, \$50,000." That was a part of the original project?

Admiral STANFORD. One hundred thousand dollars was authorized, and this amount is to complete the authorization.

The CHAIRMAN. Have we appropriated heretofore \$50,000?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. I will state to the committee and to the admiral that the question of the dock at Pearl Harbor I will bring before the committee later. There has been very great trouble with the construction of the dock, and the Secretary is now considering the matter and has submitted certain matters to the Department of Justice for official interpretation, and until the department is ready to submit some definite proposition we will pass over this item and bring the Secretary and the admiral together on the dock question specially later on.

Now, Admiral, I want to ask this question as to the water-front development, \$100,000: Is that necessary at this time, until that dock is determined and more nearly completed than it is now? Could not the \$100,000 await the determination of the dock question?

Admiral STANFORD. I think it could, without any serious inconvenience in the development of the station. Funds have already been appropriated for water-front improvement sufficient to provide a berthing space for one or two or three vessels, and it is doubtful if the repair work of the station will be very extensive until the dock is finished.

The CHAIRMAN. The next item is, "Buildings and grounds, Naval Academy: Toward the construction of a wharf and approach, \$75,000." Last year we gave you \$50,000, and now you are asking \$75,000.

Admiral STANFORD. To complete the authorization.

The CHAIRMAN. Does that complete it?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Last year it was not to exceed \$125,000, and this is to complete it?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Will it complete it?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Will you have a surplus?

Admiral STANFORD. I think not. The specifications for the construction of this wharf are now ready for advertisement, and it is estimated the project will require the full amount of the appropriation.

The CHAIRMAN. The next item is on page 56 of the bill, "Naval proving ground, Indian Head, Md.: Addition to facilities, \$50,000." Last year we gave you for that purpose \$29,000. What is the \$50,000 for?

Admiral STANFORD. The amount of \$500,000 also recommended for this place should be considered in conjunction with the item of \$50,000. I have been told by the Chief of the Bureau of Ordnance that if favorable consideration is given to the \$500,000 item it will be unnecessary to include provision for the \$50,000.

The CHAIRMAN. This simply says "toward extension of powder factory, \$500,000." I suppose the manufacturing part of it and the ordnance part of it will be taken up by the Bureau of Ordnance?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. You can give us the character?

Admiral STANFORD. I am unable to do so at the present time, for the reason that this item has only recently been determined upon by the department. I was informed by the Chief of the Bureau of Ordnance that the department desires to practically double the manufacturing capacity of the powder plant, which will require something over \$900,000, and that the item of \$500,000 is inserted as a round sum which would be sufficient for the beginning of the project. The detailed plans have not been developed, and therefore I can not state what the character of the structures or their extent would be.

The CHAIRMAN. Your information is that instead of the \$500,000, as here indicated, to enlarge the powder plant, that there will next be an additional \$400,000?

Admiral STANFORD. Yes, sir; that there will be an additional sum required.

The CHAIRMAN. And that it would take \$900,000 to double the capacity?

Admiral STANFORD. To complete the enlargement.

The CHAIRMAN. The \$50,000 item is with the Bureau of Ordnance also?

Admiral STANFORD. Yes, sir; the \$50,000 is more or less contingent upon the committee's action upon the item of \$500,000. If the \$500,000 should be approved, there will not be need for the \$50,000. That is a lesser item included in the major item.

Mr. STEPHENS. If the powder plant was enlarged to the extent of \$900,000, would that plant then supply the Government with all the powder needed?

Admiral STANFORD. That information can be obtained more reliably from the Chief of the Bureau of Ordnance, as I am not conversant with the powder demands.

The CHAIRMAN. The \$200,000 item comes under him also?

Admiral STANFORD. Yes, sir; that was asked for last year. I gathered from my conversation with the Chief of the Bureau of Ordnance that a considerable part of the \$500,000 amount will be used for equipment.

Mr. BROWNING. How much powder is made at the plant at this time?

Admiral STANFORD. About 3,450,000 pounds—3,000,000 pounds of new powder and 450,000 pounds of remade powder.

Mr. BROWNING. Your information is that they desire to double the capacity?

Admiral STANFORD. Yes, sir.

Mr. BROWNING. And make over 6,000,000 pounds a year?

Admiral STANFORD. Yes, sir.

Mr. BROWNING. How much powder is used by the Navy?

Admiral STANFORD. I can not answer that question.

The CHAIRMAN. The next item is:

Depots for coal and other fuel: For additional fuel-oil storage at Melville, Rhode Island, \$20,000; additional fuel-oil storage at Norfolk, Virginia, \$150,000; fuel-oil storage at San Diego, California, \$50,000; steel coaling tower at San Diego, California, \$45,000; fuel-oil storage at Puget Sound, Washington, \$105,000; fuel-oil storage in vicinity of San Francisco Bay, California, \$100,000; contingent, \$30,000; in all, \$500,000, to be available until expended.

Admiral, please tell us about the different ones, and which ones are the more urgent and more important. We have been appropriating heretofore for coaling stations and some fuel-oil stations \$500,000 or more a year, and we would like to have a full explanation of this and the order in which they are important or pressing.

Admiral STANFORD. These extensions were recommended by the General Board and I will learn from the board the order in which they consider the items of importance.

The CHAIRMAN. Please do that and insert it in the hearings. I will also ask you to state where at the present time we have fuel-oil storage and the capacity.

Admiral STANFORD. Tank storage built, building, or authorized is as follows:

	Fuel oil.		Gasoline.	
	Number of tanks.	Total storage	Number of tanks.	Total storage.
		<i>Tons.</i>		<i>Gallons.</i>
Boston, Mass.....	1	7,000	1	90,000
Melville, R. I.....	2	5,000	1	90,000
Norfolk, Va.....	2	5,000	1	90,000
Charleston, S. C.....	2	5,000	1	90,000
Key West, Fla.....	2	5,000	1	90,000
Guantanamo, Cuba.....	7	30,000	1	90,000
Pearl Harbor.....	5	33,000	1	90,000

DEPOTS FOR COAL.

Heretofore funds for this purpose have been appropriated under Bureau of Equipment. By Executive order this appropriation has been placed under the control of the Bureau of Yards and Docks.

As the appropriation is entirely for public-works projects, it would seem proper to make further appropriations for this purpose under the Bureau of Yards and Docks, in the same manner as for other public works of the Navy.

The estimates submitted are for those projects recommended by the general board and contemplate the providing of additional fuel-oil storage, as follows:

Melville, R. I., additional fuel-oil storage..... \$20,000

One additional 2,500-ton tank for fuel oil is contemplated on foundations which have already been constructed. This will make the total capacity of the station 7,500 tons of fuel oil.

Norfolk, Va., additional fuel-oil storage..... 150,000

Three additional 7,000-ton fuel-oil tanks are contemplated, increasing the total storage at Norfolk to 26,000 tons of fuel oil.

San Diego, Cal., fuel-oil storage..... 50,000

At the present time there is no storage at this place. An initial installation of one 7,000-ton tank is contemplated, including piping and pumping equipment.

Steel coaling tower..... \$45,000

The Navy is maintaining a small supply of coal at this point (about 10,000 tons at this time). The department desires to increase this to 50,000 tons stored in the open. At present there are no mechanical appliances for handling coal. The installation of the tower will provide means for handling the coal rapidly and economically. The station is now provided with a suitable wharf, on which the tower can be erected. Coal will be handled to and from the storage pile by small cars.

Puget Sound, Wash., fuel-oil storage..... 105,000

At the present time there is no storage at this station. An initial installation of two 7,000-ton tanks is contemplated, including piping and pumping equipment.

San Francisco Bay, fuel-oil storage..... 100,000

At the present time the Navy has no oil storage in San Francisco Bay or at Mare Island, except a small storage at the latter place for industrial purposes. The matter of a suitable site is under investigation, but it is uncertain whether a proper site can be found on land belonging to the department. The bureau has directed the commandant of the Mare Island yard to have prepared a comprehensive report on the existing commercial facilities in San Francisco Bay and recommendation for the location of a naval plant. The report is expected by the end of December.

Contingent..... 30,000

This item is needed to provide for those miscellaneous items of improvement at existing fuel-oil stations, the necessity for which can not be foreseen.

The relative order of importance of the above items, in accordance with advice obtained from the General Board, is as follows:

1. Contingent.....	\$30,000
2. San Francisco, storage.....	100,000
3. San Diego, storage.....	50,000
4. San Diego, coaling tower.....	45,000
5. Puget Sound, storage.....	105,000
6. Norfolk, storage.....	150,000
7. Melville, storage.....	20,000

Total..... 500,000

The CHAIRMAN. You spoke of fuel oil in tons; how many gallons to a ton?

Admiral STANFORD. A gallon weighs about 8 pounds.

The CHAIRMAN. Do you mean long tons or short tons?

Admiral STANFORD. Long tons.

The CHAIRMAN. Two thousand two hundred and forty pounds?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Divide that by 8 and you get the gallons per ton, 280 gallons to a ton, and those tons would be multiplied by 280?

Admiral STANFORD. Yes, sir.

Mr. LEE. There is no oil station at the Philadelphia Navy Yard?

Admiral STANFORD. No, sir.

The CHAIRMAN. The next item is on page 58, "Naval torpedo station, Newport, Rhode Island: One assembly shop, \$100,000; one torpedo storehouse, \$85,000; one machine shop, \$75,000; in all, \$260,000." The military feature of that is under the Bureau of Ordnance?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Please give us the character of the construction.

Admiral STANFORD. The buildings, in general, would be two stories high, of fireproof construction, severely plain in architectural detail, and, in general, thoroughly substantial shop buildings.

The CHAIRMAN. What would be the dimensions of the assembly shop which is to cost \$100,000?

Admiral STANFORD. Probably 250 feet by 60 feet and two stories high.

The CHAIRMAN. Of what construction?

Admiral STANFORD. It would be carried on piling and concrete piers; the walls would probably consist of steel frames with brick weather walls and metal sash; the roof would be carried on steel trusses and probably be covered with slate; the second story floor would probably be of the reinforced concrete type. The same general character of building would also undoubtedly be adopted for the other two structures which are recommended.

The CHAIRMAN. You speak of the assembly shop; is that to assemble the torpedoes and to store the torpedoes?

Admiral STANFORD. Not to store them but to assemble them. It is contemplated that the productive capacity of the torpedo station shall be supplemented by utilizing shop facilities in other stations, but that the product of those other stations shall all be forwarded to the Newport station to be assembled. This is the general assembly shop for those parts which may be manufactured in many different places.

The CHAIRMAN. The assembling of those parts is for the purpose of completing and perfecting the torpedo?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Those parts in the aggregate will carry much or less weight upon the building?

Admiral STANFORD. In the assembly building the concentrated weights would not be very great. In storage the torpedoes would probably be tiered or racked several deep, having a little pocket or receptacle for each torpedo.

The CHAIRMAN. If there would not be a great deal of weight in the assembly building, would it be necessary to have the steel structure, etc.? Would not plain brick walls answer?

Admiral STANFORD. Plain brick walls will be sufficient unless a traveling crane should be desired. If a crane is used, the runway for the crane is much more effectively supported by carrying it to steel columns, in which case the columns may be embedded in the brick work.

The CHAIRMAN. Do you think it would require a crane as indicated?

Admiral STANFORD. No, sir.

Mr. KELLEY. If I remember correctly, Admiral, the capacity of this station is about 100 torpedoes a year?

Admiral STANFORD. Yes, sir.

Mr. KELLEY. How much will this appropriation increase the capacity?

Admiral STANFORD. The Chief of the Bureau of Ordnance can answer that question better than I can.

The CHAIRMAN. Speaking of the capacity of the station, it is about 100 torpedoes of new manufacture, and in addition the repair of the old torpedoes, which is practically nearly as much as the new construction.

Mr. WILLIAMS. Admiral, are these estimates based on any plans that have been prepared, or are they just rough estimates?

Admiral STANFORD. These estimates are upon general outline plans. They differ from the estimates that are submitted for Indian Head and for the gun factory at the Washington Navy Yard, which could not be based upon anything definite or specific.

Mr. WILLIAMS. Is it not a fact that all of the torpedoes are manufactured at the naval torpedo station at Newport?

The CHAIRMAN. We buy a great many.

Mr. WILLIAMS. All the torpedoes which are manufactured by the United States, however, are manufactured at this one station?

Admiral STANFORD. That is correct. At present the navy yards are not used for torpedo manufacturing.

Mr. WILLIAMS. A good many are used on the Pacific coast?

Admiral STANFORD. Yes, sir.

Mr. WILLIAMS. Is not the cost of transportation great?

Admiral STANFORD. Transportation amounts to considerable; but considering the value of the property transported the transportation cost is relatively small.

Mr. BROWNING. It seems to me it is a question of advisability of increasing the torpedo plant at Newport. I think we should make more torpedoes; but in my opinion a plant built in a navy yard on the Pacific coast would cost no more money and the Government would save a great deal of money in freight rates. It is a question of advisability whether it is the wise thing to do and whether a plant constructed on the Pacific coast would not really save money in the end.

Mr. STEPHENS. Do you know anything about the reason for this extension rather than the construction of a plant on the Pacific coast?

Admiral STANFORD. No, sir. I would suggest that the Chief of Ordnance be requested to furnish that information.

The CHAIRMAN. I will state to the committee that last year, or the year before last, we made a considerable appropriation and practically doubled the capacity of the station at Newport, increasing it from 50 to 100. We have not yet reached the 100 limit, but that will be its capacity when they get to working. When the committee was at Newport this summer, in talking with some of the officers, they said to me that they needed some of these buildings in order to make available or usable the capacity which they would have as a result of the appropriations that we have already made. In other words, that they needed additional space for storing what they could manufacture with what we have already authorized, and that they needed the assembly building for the expeditious handling of the parts made with the equipment they already had; but we will get that definitely from the Chief of the Bureau of Ordnance.

Mr. STEPHENS. You do not understand that this is for the enlarging of the plant, in so far as making torpedoes is concerned?

The CHAIRMAN. Not that it will enlarge the capacity beyond what we have already authorized, but that it will enable them with what we have already authorized to do the work more economically and more efficiently.

I will call the attention of the committee to another fact which the clerk to the committee has just suggested: I think it was, perhaps, three years ago that we made an appropriation for the purchase of

some land on the Pacific coast for the establishment of a repair torpedo station, with a view to repairing torpedoes on the Pacific coast instead of transporting them across to the Atlantic. As soon as it was ascertained that we were going to do that, the "land sharks" got hold of the land out there which was available for that purpose and formed a trust on it and ran the price of the land up to such an exorbitant price that the department has withheld the investment of that money, and the money was authorized to be used for the same purpose in the vicinity of the navy yard in the naval appropriation bill, 1912.

Mr. STEPHENS. At what point was this contemplated?

Admiral STANFORD. Keyport Peninsula, Wash.

The CHAIRMAN. Either in the northern part of California or the southern part of Washington.

Admiral STANFORD. About 8 miles from the Puget Sound station.

The CHAIRMAN. The "land sharks" got hold of the land that was available and desirable for the purpose and immediately proceeded to organize for the purpose of holding up the Government on the price, and the department simply refrained from proceeding any further with the matter.

The CHAIRMAN. The next item is "Naval disciplinary barracks."

Admiral STANFORD. When the disciplinary barracks was established at Port Royal certain buildings were utilized which had been designed and constructed for navy-yard purposes. These buildings were not fitted in all respects for disciplinary work, and much inconvenience has resulted because of the inadequate facilities. Recently the Board of Inspection for Shore Stations visited the station and recommended various work, such as improvements in the power plant and distributing systems, additional officers' quarters, remodeling buildings, quarters for enlisted petty officers, dental surgeons' quarters, post exchange and amusement building, probation barracks, toilet facilities, improvements to steel wharf, guardhouse, rebuilding old wooden dock, dredging entrance to old dock basin, sidewalks, roads and gutters, improvements to sewer system, and improvements to recreation field, filling in and grading, the estimated cost of which amounts to \$246,000.

The CHAIRMAN. That is at Port Royal, S. C.?

Admiral STANFORD. Yes, sir. At the naval station on Puget Sound the old marine barracks were converted for use as disciplinary barracks and a high picket fence was constructed around the inclosure. The barracks at Puget Sound, like the buildings at Port Royal, are not in all respects suited for disciplinary work, and if those stations are to best serve the purposes for which they are now assigned they should be rearranged, extended, and modified in various ways. It has been, therefore, decided by the department that it would be advantageous to have an appropriation of \$200,000 for general improvements at disciplinary barracks to be expended on such projects and at such stations as the Secretary might direct.

Mr. TRIBBLE. What is a disciplinary barracks?

Admiral STANFORD. Many men instead of being imprisoned for certain breaches of discipline, with ultimate discharge from the service, as was formerly the case, are now sent to a disciplinary barracks, where they are treated in a more lenient way and given opportunity to appreciate and correct their errors. As time proceeds, if their

behavior warrants, the restrictions upon them are lessened and they are gradually transferred from a condition of restraint or "detention" to a condition of probation and afterwards unconditionally restored to duty instead of being discharged. It is now found that possibly 75 per cent of those sent to the disciplinary barracks can be returned to the service. The offenses of many of the men are probably committed more or less in ignorance and frequently by very young men who have recently enlisted.

Mr. TRIBBLE. That is true, but they are punished as if they were hardened criminals.

Admiral STANFORD. The disciplinary barracks are humanitarian institutions that bring about the conversion of many men who otherwise would be stamped with a dishonorable mark which would limit their usefulness and development for the rest of their lives. Any relief that Congress can bring to the situation I think will be fully justified.

Mr. HENSLEY. Did I understand you to say that it took away the right of citizenship?

Admiral STANFORD. Many prisoners at the present time, for certain offenses, after being confined for a certain period, as determined by the court and approved by the department, are dishonorably discharged.

The CHAIRMAN. Permit me to make a correction. That was the law heretofore, but this committee reported a bill a short time ago repealing that so far as in time of peace is concerned, and it is only in time of war.

Mr. HENSLEY. I can appreciate the importance of that.

Mr. KELLEY. Is it designed to equip these barracks with cells, after the manner of a prison?

Admiral STANFORD. The barracks have a brig or cells of limited capacity, because some prisoners at times require more rigid confinement than could be provided in the main barracks.

Mr. KELLEY. Where?

Admiral STANFORD. At Port Royal, S. C., and at the naval station at Puget Sound, Wash.

The CHAIRMAN. Have you a similar item with reference to contemplated improvements at Puget Sound?

Admiral STANFORD. Not in such detail.

The CHAIRMAN. Can you put in the hearings something along the same lines as to the expected improvements?

Admiral STANFORD. I hardly can at this time, because the barracks at Puget Sound are not used to a great extent, and I think the department's ideas as to the development of this station are not yet complete. The reason for the particular wording of the item is to give the Secretary a certain latitude in the expenditure of the fund, so that he can expend more or less at Port Royal, at Puget Sound, or some other place as seems best. There has not been a unanimous opinion in favor of the establishing of disciplinary barracks at Puget Sound; there have been those who have urged that the barracks could better be located farther south, where the climatic conditions are more favorable to confinement. Location of the barracks in the heart of the Puget Sound yard has also been discouraged by some, because the area of the yard is none too great for legitimate navy yard uses.

The CHAIRMAN. Let me ask you a question: Instead of expending this money as proposed here, what about the facilities at New Orleans or at Pensacola or at both of them for using property that the Government already has for the maintenance of these disciplinary barracks? They are sending some marines, I notice, to Pensacola. What is your opinion as to the availability of either or both of those places?

Admiral STANFORD. I am inclined to believe that only one disciplinary barracks is desired for the east coast, and the structures at Port Royal are as well suited for the purpose as those at Pensacola or New Orleans.

The CHAIRMAN. I am not speaking of changing Port Royal, but instead of building additional ones, if they have not the full facilities at Port Royal or the other place, to use what they have?

Admiral STANFORD. Additional expenses attend that method, because the greater distance from New Orleans to the eastern navy yards would increase travel costs and also because it would cost more to operate two stations than one.

Mr. ESTOPINAL. It would not interfere with the development of the station at New Orleans to reopen it for the repair of ships?

Admiral STANFORD. That would depend upon the extent to which it might be desired to develop the barracks and the extent to which the station will be used for manufacturing purposes.

Mr. ESTOPINAL. The property is not very extensive?

Admiral STANFORD. A little over 165 acres.

Mr. HENSLEY. I wish to say this, that I was interested in the admiral's statement concerning the purpose of the department to ameliorate the conditions and do something for these youngsters in the Navy who, perhaps, transgress some of the rules, etc., but do you not think, Admiral, that it all depends very largely upon the treatment accorded these boys by the officers, and that a great deal can be done right now to bring about the reforms?

Admiral STANFORD. I am inclined to feel that many offenses result from a tendency on the part of boys newly recruited from inland and small places when first given liberty in a large city, to go out with enlisted men who are older and possibly a little more hardened than their companions. In other words, offenses result from the blind following of a leader rather than because of any inherent moral weakness or deficiency.

Mr. HENSLEY. I appreciate that. You think that this appropriation is necessary because in the very nature of things these young boys should be separated from the older ones?

Admiral STANFORD. If they do fall from grace, they should not necessarily be treated as moral degenerates. Boys who have made a single and possibly unintentional error and who, after it has been pointed out to them—

Mr. HENSLEY (interposing). I want to ask whether or not that reform can be brought about right now without this appropriation?

Admiral STANFORD. This appropriation is for the purpose of improving the barracks for the better accommodation of the prisoners and guard.

The CHAIRMAN. Instead of sending them under criminal sentence to the naval prisons or the prison ships they are being sent to these disciplinary barracks, a sort of reformatory institution. Where they

find a man has been sent to the prison who ought to be taken away from the prison, they take him from the prison and send him to these barracks, and this is to enlarge the facilities of the barracks.

Mr. TALBOTT. And add a little to their comfort?

Admiral STANFORD. Yes, sir; there are a good many non-commissioned officers required in connection with this work. There are no accommodations for those people at the Port Royal station, and there is no little settlement in the immediate vicinity where they can live with their families, and they ought to have their families with them to make them contented.

I would like to add, in connection with this table, that the items were all taken from the report of the board of inspection for shore stations; and as chief of the bureau I do not approve or favor all of them; for instance, the rebuilding of the wooden dock.

The CHAIRMAN. Please indicate carefully the ones you do not approve or those you desire to modify.

Admiral STANFORD. Yes, sir. The item of \$200,000, you will note, is reduced considerably from the total of \$246,000, and also cares for the Puget Sound station. I would eliminate all reference to the repair of the dry dock and expend but a small amount upon the power plant and for dredging.

Mr. FARR. What percentage of these boys is improved in these probationary barracks?

Admiral STANFORD. The commanding officer, according to my recollection, has reported that from 65 to 75 per cent are returned to good standing; and there is, incidentally, saved all the money expended upon the preliminary education and in the actual enlisting of this force.

The CHAIRMAN. It reduces the recruiting and educational cost?

Admiral STANFORD. Yes, sir.

Mr. KELLEY. What employment is furnished to the boys at Port Royal?

Admiral STANFORD. There is no industrial employment except such as is involved in the care of the station. Those who have a little ability as carpenters or plumbers or in any of the trades are employed as their ability warrants and as the actual needs of the station requires, but the station is in no respect an educational school in industrial pursuits.

Mr. KELLEY. Do you not think it would be advisable to install some labor system?

Admiral STANFORD. It would materially promote the capacity and value of the men as American citizens to have such training.

Mr. KELLEY. I noticed, for instance, in Newport that they worked about the yard in groups of five with a soldier behind them.

Admiral STANFORD. Those boys probably had committed some minor offense and were doing penance.

Mr. FARR. Have you the authority in the probationary section to educate them mechanically or industrially?

Admiral STANFORD. The station does not afford facilities for such education.

Mr. FARR. Do you think it advisable to do so?

Admiral STANFORD. That is a broad question. It would probably mean the construction and equipping of shops and the detailing to

the station of those who are mechanically qualified to operate the shops and to instruct the boys. There would be considerable expense attached to such a proceeding.

Mr. FARR. Would it not ultimately be self-sustaining?

Admiral STANFORD. It might be possible to have certain products required in the service manufactured by these boys. I do not know about that.

The CHAIRMAN. I would like to call the attention of the committee to the report of the Judge Advocate General under whose jurisdiction these matters come. He says:

The detention system for the punishment of persons in the Navy and Marine Corps convicted by general courts-martial of military offenses, which system was explained at some length in my annual report for 1912, has been continued with gratifying results. During the past fiscal year naval disciplinary barracks were maintained at Port Royal, S. C., and at the navy yard, Puget Sound, Wash. The annual report of the naval disciplinary barracks at Port Royal for 1913 shows that a total of 854 cases were handled at said barracks during the year, including 268 men remaining over from the previous fiscal year and 586 new cases received from July 1, 1912, to June 30, 1913. In all these cases the men had been sentenced by general courts-martial to confinement at hard labor, a large proportion of the sentences also including dishonorable discharge. However, under the department's action in said cases, the sentences were mitigated to detention and the men, instead of being required to serve their sentences in naval prisons, were transferred to the naval disciplinary barracks at Port Royal, S. C., subject to the conditions and benefits specified in the rules and regulations governing said barracks, the substance of which was set forth in my last annual report. Of the 854 men who, instead of being required to serve sentence at a naval prison, were transferred to the disciplinary barracks at Port Royal, 3 were later transferred to the Government Hospital for the Insane, and 367 were still undergoing detention at said barracks on June 30, 1913, their cases not having been finally disposed of, either because of the short time they had been at the disciplinary barracks, or for other reasons. Of the remaining 484 men who were transferred to the disciplinary barracks a total of 348, or about 72 per cent, may be regarded as having "made good" so far as shown by the results on June 30, 1913. Thus, on the date named, 214 of these men had been unconditionally restored to duty in the service at large, 102 were serving a probationary period at the disciplinary barracks with a view to their unconditional restoration to duty, and 32 had been discharged from the service with recommendation for reenlistment. In the annual reports from the naval disciplinary barracks, Port Royal, are found the following statements:

From the commanding officer's report:

"During the year the scope of the drills has been extended, and greater care has been used in training detentioners. The result has been most satisfactory, as is shown by the neat and well-set-up appearance of the battalion of detentioners. All detentioners, including all rates, are drilled at least one month before being placed on special details, such as would be required of their rates on board ships. Detentioners are also required to perform guard duty within the detention inclosure and barracks.

"Greater care has been taken in selecting probationers for complete restoration to duty. These men are required to drill and perform regular guard duty in addition to carrying out the duties required of their rates.

"It is believed that excellent results may be obtained in starting classes at this post for radio operators, electricians, mechanics, yeomen, bakers, and cooks. As soon as it is possible for the Bureau of Navigation to furnish suitable instructors this work will be taken up."

From the medical officer's report:

"The health of the detentioners in general has been excellent."

From the chaplain's report:

"The moral atmosphere of the station, so far as I have been able to judge, is good. The men appear to be contented and are trying to make good."

All of the special appropriations which were made last year on pages 60 and 61 have been eliminated this year and you are not asking for them?

Admiral STANFORD. No, sir.

The CHAIRMAN. The next item is "Repairs and preservation at navy yards and stations: For repairs and preservation at navy yards

and stations, \$1,000,000," instead of \$800,000 appropriated last year. You mentioned that in a general way at the beginning of your hearing?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Have you anything additional which you wish to say about that item?

Admiral STANFORD. I know of nothing.

Mr. WILLIAMS. Are any of the items which are elsewhere enumerated included in this \$1,000,000 estimate? Do any of the appropriations that are elsewhere provided for go to make up this item of \$1,000,000?

Admiral STANFORD. No, sir. This is additional to all other items recommended.

Mr. WILLIAMS. This is a mere estimate or approximation of what the work will require?

Admiral STANFORD. Yes, sir: It is a general item for the repair and preservation of all public-works property under the cognizance of the bureau and covers property having an appraised or estimated value exceeding \$100,000,000, consisting of dry docks, sea walls, buildings, power-plant equipment, distributing systems, etc., all of which involve expense to maintain in a proper condition of repair. Allotments from this item are made to the different stations in proportion to their needs.

Mr. GRAY. What is the increase of \$200,000 for?

Admiral STANFORD. The amount was formerly \$800,000, which is insufficient, and it is urged that it shall be increased to \$1,000,000 to meet urgent needs. There is property deteriorating and depreciating every day because we can not make the small repair that is necessary to prevent a larger repair at a later day.

Mr. WILLIAMS. The increase is not for any specific matter; just for the whole matter?

Admiral STANFORD. For the general purpose of bringing about a better condition of repair.

The CHAIRMAN. On page 46, under the proposed distribution of the Bureau of Equipment appropriation, Admiral, I see you get out of the equipment appropriation, "Coal and transportation, \$200,000?"

Admiral STANFORD. Yes, sir.

The CHAIRMAN. For what purpose does your bureau use that appropriation?

Admiral STANFORD. For painting coal sheds, for repairing the water fronts in connection with the coal sheds, and for repairs to the mechanical equipment of the coaling stations; in general, for repairs to coaling stations similar to those provided for general public works property under appropriation, "Repairs and preservation."

The CHAIRMAN. This is limited to the various coaling stations and coaling plants and the general maintenance, upkeep, and repair?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Did you have any unexpended balance last year out of the appropriation?

Admiral STANFORD. Repairs were made last year under an allotment made by the Navy Department. The amount of the allotment was that represented as necessary for the different places, and consequently it was all spent.

The CHAIRMAN. You used it?

Admiral STANFORD. Yes, sir; we asked for not more than was needed and we were given that which was asked for, and it was all pent.

The CHAIRMAN. Admiral, have you any suggestion to make relative to the contemplated distribution of the appropriation and work under the Bureau of Equipment relative to the ocean and lake surveys and the high-power radio stations?

Admiral STANFORD. The appropriation act of August 22, 1912, included under the head of "Ocean and lake surveys, Bureau of Equipment," an amount of \$1,000,000 for high-power radio stations, the appropriation contemplating the construction of six different stations. The station for the Isthmus of Panama is now under construction and will probably require \$250,000 for its completion, of which over \$195,000 will be required for the towers and buildings and other public-works features. About four-fifths of the amount appropriated for wireless work, judged from experience at Panama, will be required for the "public works" portions, leaving one-fifth necessary for the electrical equipment, which is handled by the Bureau of Steam Engineering. Under these circumstances it would seem as though the appropriation for the public works required for the high-power radio stations should be placed specifically under the cognizance of the Bureau of Yards and Docks in order to simplify the handling of the funds and to expedite the construction of the work. It should also be noted that the amount of \$1,000,000 which has been appropriated for six stations, judged from the amount required for the Panama station, is only about two-thirds of the total which will be required.

The CHAIRMAN. As it is now, Admiral, does the Secretary have the power to allot and distribute from the equipment appropriation?

Admiral STANFORD. Yes, sir; with the President's approval.

The CHAIRMAN. And the other to the Bureau of Steam Engineering?

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Then if the Bureau of Equipment should be abolished and the duties distributed as is recommended and as has been for a year or two that we have been waiting to see how it would work out, your suggestion is that that part of it should go to "Public works, Bureau of Yards and Docks?"

Admiral STANFORD. Yes, sir.

The CHAIRMAN. Have you included the proper language in your suggestion so as to make that distribution and leave the other?

Admiral STANFORD. I have not.

The CHAIRMAN. Will you incorporate that in the hearings?

Admiral STANFORD. Yes, sir.

Include in appropriations under the Bureau of Yards and Docks, an item, as follows:

The appropriation under ocean and lake surveys, Bureau of Equipment, for high-power radio stations, act of August twenty-second, nineteen hundred and twelve, is hereby modified to provide that \$800,000 of the amount authorized is transferred to the Bureau of Yards and Docks to provide for the public-works features of the stations, including the purchase and preparation of the necessary sites and purchase and erection of towers and buildings, and there is hereby appropriated toward said projects \$350,000.

The CHAIRMAN. There are some small stations in the radio work. Are they under "Steam engineering" or under "Equipment," or partly under this and partly under "Engineering"?

Admiral STANFORD. Under present regulations the Bureau of Steam Engineering has cognizance of these stations. The Bureau of Yards and Docks executes those portions of the projects which are of public-works character upon recommendation of the Bureau of Steam Engineering, using allotment of funds made by the department from "Equipment" appropriation. During the fiscal year 1913 the Bureau of Yards and Docks supervised the expenditure of \$88,374.22 from this appropriation for various public-works objects at Arlington and Guantanamo. Other work in progress and authorized at these stations and at Key West, Fla.; Washington Navy Yard; Point Isabel, Tex.; Colon and Balboa, Panama; Boston, Mass.; and Beaufort, N. C., will probably require a further expenditure of \$210,000.

The CHAIRMAN. In your hearings will you incorporate the language that it would be appropriate to use in the bill if the committee desires by law to distribute these duties, instead of leaving it with the department?

Admiral STANFORD. Yes, sir.

Include in appropriations under Bureau of Yards and Docks an item as follows:

Improvements and repairs to radio shore stations, including purchase of necessary land at cost not to exceed \$50,000, but excluding radio equipment, \$200,000.

The above provision should be accompanied by a corresponding reduction in the appropriation "Equipment of vessels" and the elimination of the words beginning the last line page 38 to fourth line page 39, draft No. 1, naval appropriation bill, as follows:

including the purchase of land as necessary sites for radio shore stations: *Provided*, That the sum to be paid out of this appropriation for the purchase of land for sites for radio shore stations shall not exceed \$50,000.

There are also inserted, in accordance with request, general data regarding dry docks, channel approaches to navy yards, and marine railways; also sea wall and hydrographic data relating to the Mare Island and Philadelphia yards.

[Revised by Bureau of Yards and Docks, December, 1913.]

Yard or station.	Dock No.	Kind.	Material of which dock is constructed.	Class of maximum ship capable of being docked.	General dimensions.						Entrance.	
					Length coping head to sill.	Length on floor head to sill.	Width at coping.	Width top of blocks.	Depth mean high water blocks.	Width at coping.	Gov. erning width 6 feet above sill.	Depth mean high water to sill.
Portsmouth.....	2	Dry dock.....	Granite and concrete	Utah.....	740 104	718 104	130 04	136 84	20 24	101 9	91 2	30 24
Boston.....	1	do.....	Granite.....	Raleigh.....	373 118	357 1	86 14	156 24	23 04	60 3	46 104	23 14
Do.....	2	do.....	Granite and concrete	Utah.....	738 1	729 0	114 0	186 0	30 0	101 84	91 44	30 0
New York.....	1	do.....	Granite.....	Monteary.....	349 14	326 34	96 14	156 14	22 14	67 14	47 6	25 44
Do.....	2	do.....	Concrete.....	Missouri.....	462 04	451 34	112 104	174 6	26 3	90 64	75 6	26 64
Do.....	3	do.....	Wood.....	Mississippi.....	656 44	624 94	180 104	72 2	27 54	105 44	77 04	29 84
Do.....	4	do.....	Granite and concrete	Largest contemplated.	694 6	694 9	136 0	112 0	32 11	120 34	112 0	35 54
Philadelphia.....	1	do.....	Wood.....	Minneapolis.....	491 74	459 104	131 84	58 74	22 11	86 0	57 94	23 14
Do.....	2	do.....	Granite and concrete	North Dakota.....	744 64	731 104	140 24	97 04	29 104	102 74	91 10	29 104
Norfolk.....	1	do.....	Granite.....	Cheyenne.....	324 04	303 0	86 34	60 04	26 11	60 04	.....	25 11
Do.....	2	do.....	Wood.....	Minneapolis.....	490 44	459 8	130 4	57 0	24 104	85 0	88 8	25 64
Do.....	3	do.....	Granite and concrete	Largest contemplated.	722 11	723 0	136 0	96 14	31 04	112 44	101 0	34 04
Charleston.....	1	do.....	do.....	Utah.....	566 0	548 0	134 0	96 2	31 14	113 04	101 114	34 14
Mare Island.....	1	do.....	Granite.....	Charleston.....	507 114	469 14	122 0	45 0	27 04	80 64	61 0	26 3
Do.....	2	do.....	Granite and concrete	North Dakota.....	740 44	729 104	120 0	88 0	28 94	101 114	92 34	30 34
Puget Sound.....	1	do.....	Wood body, masonry entrance.	Mississippi.....	636 114	618 74	130 14	76 34	28 04	92 84	74 0	29 104
Do.....	2	do.....	Granite and concrete	Largest contemplated.	827 6	801 8	145 0	113 0	35 6	123 04	114 4	38 0
Pearl Harbor.....	1	do.....	do.....	do.....	999 6	1,008 0	138 0	114 0	32 24	123 0	114 4	34 84
Pollok P. I., New Orleans.....	1	do.....	Stone.....	Vermont.....	110 0	.....	.....	.....	28 0	30 0	.....	7
Chicago.....	1	Floating dry dock.	Steel.....	Connecticut.....	525 0	500 04	100 0	.....	30 0	.....	.....	.....
Port Royal.....	1	do.....	do.....	Olympia.....	500 04	486 0	99 104	59 0	30 0	97 0	70 0	26 0
Do.....	1	Dry dock.....	Wood.....	.....	486 0	.....	126 0	59 0	26 0	.....	.....	.....

* Maximum.

* Minimum.

* Out of commission or abandoned.

Marine railways, United States Navy.

Name of navy yard or naval station.	Length.	Capacity.	Name of navy yard or naval station.	Length.	Capacity.
	<i>Feet.</i>	<i>Tons.</i>		<i>Feet.</i>	<i>Tons.</i>
Washington, D. C.....	493	493	Cavite No. 1.....	305	500
Norfolk, Va.....	300	150	Cavite No. 2.....	230	30
Key West, Fla.....	648	750	Cavite No. 3.....	210	25
San Juan, P. R.....	65	6			

MARE ISLAND.

The berthing space available at the Mare Island Navy Yard is as follows:

- 900 linear feet with 24 feet depth at mean low water.
- 1,100 linear feet with 22 feet depth at mean low water.
- 1,100 linear feet with 12 feet to 18 feet depth at mean low water.
- 400 linear feet with 22 feet to 30 feet depth at mean low water.

4 channel buoys with 20 feet to 23 feet depth at mean low water.

The depths given are at a distance of 50 feet from quay wall. Bottom is soft mud. Ships of greater draft than above are sometimes berthed at high water, and the bottom scours out under them. Distance between mean high water and mean low water is 4.8 feet.

Limiting channel depth in Mare Island Straits over width of 300 feet is at present 24 feet deep at mean low water. Dredging is now in progress which will provide a channel 600 feet wide and 30 feet deep at mean low water with a basin opposite the working part of the yard 4,200 feet long by 1,000 feet wide by 30 feet deep at mean low water.

The dredging of the channel in San Pablo Bay has just been completed by the Engineer Corps of the United States Army. This channel is 500 feet wide with a depth of 30 feet below mean lower low water—equivalent to a depth of approximately 31 feet at mean low water. The controlling depth of the channel from San Francisco Bay to the entrance of Mare Island Straits is therefore at present 30 to 31 feet at mean low water.

PHILADELPHIA.

The berthing space at the Philadelphia Navy Yard is as follows:

- 3,800 linear feet with depth of 31 feet at mean low water.
- 7,600 linear feet with depth of 30 feet at mean low water.
- 4,750 linear feet with depth of 20 to 28 feet at mean low water.

Distance between mean high water and mean low water is 5.9 feet.

The approach channel to Philadelphia has a width of 500 feet and depth of 30 feet at mean low water.

Congress has approved an 800-foot channel with 35 feet at mean low water, and work is under way on this project under the Corps of Engineers, United States Army.

(Thereupon the committee adjourned to meet to-morrow, Thursday, December 18, 1913, at 10.30 o'clock a. m.)

[No. 4.]

**COMMITTEE ON NAVAL AFFAIRS,
Thursday, December 18, 1913.**

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENT OF DR. CHARLES F. STOKES, SURGEON GENERAL, UNITED STATES NAVY.

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Dr. Stokes, Chief of the Bureau of Medicine and Surgery.

Dr. Stokes, I notice that for the item "Medical Department: For surgeons' necessities for vessels in commission, navy yards, naval stations," etc., you are asking the same amount as last year?

Dr. STOKES. Yes, sir.

The CHAIRMAN. Did you have any unexpended balance in that appropriation last year?

Dr. STOKES. My recollection is that we were within the appropriation of \$510,000.

The CHAIRMAN. Can you insert in the hearings the amount of any unexpended balance which you have?

Dr. STOKES. Yes, sir; if I may supplement my hearing.

The CHAIRMAN. Certainly.

Statement by Dr. Stokes: The balance at this date is approximately \$60,000. This will be sufficient for all outstanding accounts and for adjustments yet to be made in the Treasury. Two years are allowed for settlements. There will be no deficiency.

The CHAIRMAN. Has there been any increase in the demands upon this appropriation?

Dr. STOKES. There have been from time to time expeditions sent to southern waters and the usual number of vessels going into commission and going into reserve that call for considerable funds, and if it is proper at this time, I would like to tell you what vessels it is proposed to commission during the ensuing fiscal year.

The CHAIRMAN. Certainly.

Dr. STOKES. We have asked for no increase in this appropriation unless there be an increase of personnel. In that case, for each additional thousand men we shall have to ask for \$10,000. That means \$10 per man per year. It is the department's intention, as far as I can learn, to put into commission two battleships, and from the appropriation "Medical Department" now under consideration that will call for an expenditure of \$6,000.

Mr. ROBERTS. For each battleship or for the two?

Dr. STOKES. For the two. The equipment must of necessity be complete, because these vessels often operate singly, and they are so placed that they are absolutely dependent upon their own resources, not only to save life, but to prevent disease and disability. The whole purpose and intent of the Medical Department to-day is primarily to

prevent disability. We look upon that sort of work as a military asset.

We look upon each man as the ordnance officer looks upon a gun; if we can keep him at a high point of efficiency by activities that come under this appropriation, we feel that we are doing primarily the best service for the Navy. Incidentally, naturally, the humanitarian feature falls into line and the man gets the best kind of care if he meets with serious disaster or disability unfitting him for active duty. With the proposed commissioning of ships there will be six destroyers commissioned, calling for an expenditure of \$1,500 from this appropriation for the six vessels. There will be eight submarines, requiring a total expenditure of \$500. Of course, in these small vessels the makeshift first-aid outfit is all that is required, as the submarines have at hand a mother ship with devices for the resuscitation of those asphyxiated through mishap, and provision for ordinary accidents that occur in these cramped and complicated mechanisms. The one submarine tender or mother ship just referred to will call for an expenditure of \$2,000. As I said, there will be a large personnel on duty, relatively, in these submarines, and the sick will be taken out of the ships and kept on board the tender.

The CHAIRMAN. The tender is the mother to how many submarines?

Dr. STOKES. It is variable. I can not tell you off hand the number of submarines that would be in a fleet of that sort. It might, at a rough guess, be from 10 to 12. With the destroyers there is also a tender or mother ship. On the tender or mother ship we have one or more medical officers stationed with a full equipment; and for this tender or mother ship for the destroyers the same amount, \$2,000, will be required for equipment and upkeep in the medical department.

The CHAIRMAN. That makes a total of how many ships?

Dr. STOKES. There are two fuel ships to go into commission, each calling for an expenditure of \$2,000, and totaling in all \$14,000. The number of ships going into commission is 20—2 battleships, 6 destroyers, 8 submarines, 1 submarine tender, 1 destroyer tender, and 2 fuel ships.

The CHAIRMAN. That is an additional number of ships to look after; but you have asked for no increase in the appropriation?

Dr. STOKES. That is correct.

Mr. WITHERSPOON. Which ships do you refer to as the two battleships?

Dr. STOKES. For instance, the *Texas* and *New York* are two.

Mr. WITHERSPOON. They are the ones which will be completed this year?

Dr. STOKES. They are not in commission yet.

Mr. WITHERSPOON. Do you know how long it will be before they will be completed?

Dr. STOKES. I presume they will be commissioned within the next two or three months, about the 1st of March, somewhere along there.

Mr. ROBERTS. Those are not the two ships you are providing for?

Dr. STOKES. No, sir; those are already provided for.

Mr. WITHERSPOON. I want to know which two battleships you are talking about?

Dr. STOKES. I mean the *Oklahoma* and the *Nevada*.

Mr. WILLIAMS. Your estimate of \$3,000 is the amount allotted to a battleship for medical treatment and attention?

Dr. STOKES. It includes a multiplicity of apparatus, beginning with instruments, appliances, bedding, drugs, and disinfecting appliances, and the upkeep of the same.

Mr. WILLIAMS. What is the additional expense to each battleship, for instance, the pay of the personnel necessary, the surgeons, etc.?

Dr. STOKES. The surgeons' pay?

Mr. WILLIAMS. Yes, sir; and the number to each ship.

The CHAIRMAN. That does not come out of this appropriation.

Dr. STOKES. The surgeons' pay would naturally vary with the rank of the medical officer and the number assigned. We try to assign two medical officers to a battleship. We have something like 59 vacancies, and in some instances it has been impossible to do so.

Mr. WILLIAMS. I would like to ascertain the total cost for each battleship, not only of the equipment but of the pay and the number of employees?

Dr. STOKES. If you so desire, I can give you a more definite statement.

The CHAIRMAN. Please put that in the hearings.

Dr. STOKES. Yes, sir.

STATEMENT BY DR. STOKES.

The pay of the medical officers and Hospital Corps men will vary according to rank and rating, and, as stated by the chairman, this expense does not come out of the appropriation under consideration but out of "Pay of the Navy."

The following figures are approximate only:

	Per annum.
Surgeon (1).....	\$4,400
Assistant surgeon (1).....	2,200
Hospital steward (1).....	1,008
Hospital apprentices, first class (2).....	792
Hospital apprentices (3).....	792
Total.....	9,192

The cost of the original medical outfit I have already stated to be \$3,000. The cost of maintenance varies greatly, from \$400 or \$500 the first year, when the outfit is new, to \$1,000 or \$1,500 in later years, and according to activity.

As I said before, I have tried to broaden out our field of work in the last three or four years.

Mr. GRAY. Doctor, what will be the total appropriation in this bureau of the Navy?

Dr. STOKES. Under this appropriation?

Mr. GRAY. Yes, sir.

Dr. STOKES. \$510,000 is what we are asking for.

The CHAIRMAN. \$667,000 is the total for the medical bureau.

Dr. STOKES. I would like to emphasize again that this equipment I have spoken of that costs \$3,000 is not simply to treat sick sailors, it is to avert disability. That means the investigation of all parts of the ship. We have to avert trouble in the fireroom; every man is examined physically before an endurance run, the air is tested before an endurance run, the men are observed during the endurance run, the men are examined after an endurance run, the air is examined again, and all that requires peculiar types of apparatus.

Mr. GRAY. What is the amount of the increase?

Dr. STOKES. There is no increase.

Mr. GRAY. The present amount is what you have been allowed for the current year?

Dr. STOKES. Yes, sir; there is no increase asked for. Of the \$510,000 under this appropriation, \$225,000 will be required for the pay of civilian employees at the naval hospitals, navy yards, naval stations, and naval medical supply depots, and \$285,000 for medical and surgical supplies and appliances for ships and stations in the care of 60,000 men.

In this connection I want to take this opportunity of saying that efforts of economy have been very loyally supported by the medical officers of the Navy. We faced a great obligation against one fund when I came into office, and I had to beg of them, implore them, direct them, and drive them to economy, so that to-day we feel that we administer the medical department in an economical and efficient way. There are a number of ships that have been put into commission and held in reserve. Each one of those ships must have a medical outfit. The medical outfit can not be sent to a supply depot and used on another ship, it must be kept on the ships in reserve, because those ships in reserve are likely to be called into active service within 24, 48, or 72 hours' notice, and it would be impracticable to assemble an outfit suitable for a ship for active service in that time. It is not proper to send a ship to sea unless it is fully equipped in the medical department. You must bear in mind constantly that we have 1,000 souls on board. We have cramped in a restricted space a multiplicity of activities that can not be paralleled anywhere that I know of. We have a floating hostelry, we have to feed, clothe, house, and berth these people, and we have to propel these ships. We have the fire-room force and we have the engine force as well as the battery and its adjuncts, and we have to make provision for battle.

Mr. WITHERSPOON. Do you think the men that work way down in these battleships are in a healthy, pure atmosphere?

Dr. STOKES. That leads to another feature of the whole organization. There must be artificial ventilation. There are innumerable spaces that never see daylight, and they must be illuminated and ventilated. You can well understand that in case of battle that in some parts of the ship there must be dead air, as you can not have any ventilating apparatus operating, because that would suck in the powder gases or smoke and might kill every one in a compartment. The men who work below decks are ordered to go on deck and spend as much time in the sunlight and open as possible. We have studied carefully, statistically, each part of the ship, and we know where cases of tuberculosis crop out, and we know where other cases of disease develop, and endeavor to avert these disabilities on the score of military efficiency and humanitarianism. We hope to introduce the Swedish system of training on the ships to avert disabilities that might come from the unusual localities of the men's work. This system of physical training is now in use at various shore stations.

Mr. WITHERSPOON. Do you find more sickness among the men down at the bottom of the ship than among those on the deck?

Dr. STOKES. There is a slightly greater proportion of sickness among these men, but that can be largely averted in the way I have

mentioned, by getting them up and getting them out; driving them out. After a man stands his watch in the fireroom, for example, he is usually tired and in order to go on deck in former times he had to appear in a tidy, clean uniform, and sometimes in preference he would lie on the deck in the passageway. We found that John Smith or William Jones would come along and shuffle through the passageway and stir up some dust and possibly tubercular bacilli. That is one of the situations which has been cleaned up. As far as possible these men are driven to do what can be done to conserve health.

The scheme of ventilation on our ships is a very complicated problem. We are striving to supply humidity. You can get plenty of nonhumid fresh air, but it dries up the mucous membrane and induces respiratory disease, and thus is harmful. It is a very complicated, difficult problem. In that connection I might say that it is not always the vitiated air that does the greatest harm. We may have certain chemical contamination unduly present without doing material harm if the air is mechanically circulated and cooled. That being the case, we install fans in turrets and in firerooms. In battle hatches must be closed, everything must be shut down; but if you keep the air in circulation and if you keep down the humidity the men can get along.

The CHAIRMAN. The next item, Doctor, is "Contingent, Bureau of Medicine and Surgery," specifying various items. There is no change in the language and no change in the amount, no increase asked for. Did you have any unexpended balance in the last year?

Dr. STOKES. No, sir. To the best of my recollection there was none.

The CHAIRMAN. Will all of this amount be needed for the next year?

Dr. STOKES. It will; yes, sir. If we have an increase in personnel, we shall have to ask for \$2,500 for each thousand additional men. That will be \$2.50 for each additional individual.

Mr. ROBERTS. It has been suggested to the committee that the item "Transportation and burial of the dead" be taken out of the contingent appropriation for the Bureau of Medicine and Surgery and be transferred to navigation. I would like to inquire whether you have been consulted with regard to that and whether it meets with your approval?

Dr. STOKES. I have been consulted. In my opinion it should remain where it is. I can imagine a great many embarrassing situations where, through delay, we might be required to keep the dead in hospitals unduly long, and it might be distressing to the next of kin. These transfers are effected promptly, as soon as we can get into touch with the next of kin, as required by law, and get the proper request from them.

I have taken the liberty to prepare, in accordance with your direction, a more itemized statement of each appropriation, and I would like to embody that in the hearing.

The CHAIRMAN. Certainly.

(The statement referred to by Dr. Stokes follows:)

WASHINGTON, D. C., December 8, 1913.

Memorandum of estimated expenditures by classes, for use of Committee on Naval Affairs.

Medical Department, 1915:

For surgeons' necessities for vessels in commission, navy yards, naval stations, Marine Corps.....	\$285, 000
For the civil establishment at the several naval hospitals, navy yards, naval medical supply depots. Naval Medical School, Washington, and Naval Academy.....	225, 000
	<hr/> 510, 000 <hr/>

Contingent, Medicine and Supplies, 1915:

For tolls and ferriages.....	500
Care, transportation, and burial of the dead.....	6, 000
Purchase of books and stationery, binding of medical records, unbound books, and pamphlets.....	6, 500
Hygienic and sanitary investigation and illustration, sanitary and hygienic instruction.....	4, 000
Purchase and repairs of wagons, automobile ambulances, and harness..	9, 000
Purchase of and feed for horses and cows.....	9, 500
Trees, plants, garden tools, and seeds.....	5, 000
Incidental articles for the Naval Medical School and naval dispensary, Washington; naval medical supply depots, sick quarters at Naval Academy and marine barracks (furniture, etc.).....	25, 000
Rent of rooms for naval dispensary, Washington, D. C., not to exceed \$1,200.....	1, 200
Washing for medical department at Naval Medical School and naval dispensary, Washington; naval medical supply depots, sick quarters at Naval Academy and marine barracks, dispensaries at navy yards and naval stations, and ships.....	5, 500
For minor repairs on buildings and grounds of the United States Naval Medical School and naval medical supply depots.....	4, 600
For the care, maintenance, and treatment of the insane of the Navy and Marine Corps on the Pacific coast.....	2, 000
For dental outfits and dental material, not to exceed \$38,000.....	38, 000
All other necessary contingent expenses.....	25, 200
	<hr/> 142, 000 <hr/>

Mr. ROBERTS. Toward the end of this last item on page 65 there is the provision, "For dental outfits and dental material, not to exceed \$38,000." Is all of that amount necessary?

Dr. STOKES. It is.

Mr. ROBERTS. Did you not make that amount large on account of the installation of these outfits?

Dr. STOKES. We have to install the outfits, and estimate that it will cost in addition about \$1,000 for dental material for operation of each dental office. That means something like \$2.50 a day. I might say in this connection that the dental activities in the Navy have been most beneficial. We have added very materially to the recruiting because we can take men who have possibly impaired teeth or teeth defective in a way that we can not accept them or rather that we could not accept them before; we send them to the dental surgeon and have them put right and sent to active duty. The same activities are carried on in the hospitals, thus very materially increasing the number of recruits.

Mr. ROBERTS. Will this amount, in your judgment \$38,000, be necessary annually now?

Dr. STOKES. I think it will. When the corps is fully recruited we shall have 30 dental surgeons and we may, if the necessity arises, appoint additional surgeons from the reserve corps, one to each 1,500 of personnel. It is surprising the amount of dental work that is required to keep the officers and enlisted men physically fit and to avert illness.

Mr. ROBERTS. How is the new plan working, where the men are required to state on return to duty whether they have been exposed to venereal disease, and if so they are given proper treatment and not punished; and where if they have been exposed and do not disclose it upon return to the ship they are punished if they develop that disease?

Dr. STOKES. That is a difficult problem and it is a difficult answer to give clearly. In the first place, before this practice was instituted there were a number of cases of concealed venereal disease on each ship. The disease was concealed, because the men were restricted to the ship if they were known to be ill. We now require each man who has any venereal infection to be taken up on the sick list, and thus it becomes a matter of record; and as all are frequently examined, so, on paper, our statistics show a very marked apparent increase along these lines. The men are given lectures and talks on sex hygiene. They are told of the dangers and they are told that exposure is not a matter of necessity for health. We are dealing with clean-minded men. A large proportion of them are splendid young men. We have found, on the Asiatic station, after this practice was instituted and these lectures were begun that the exposures fell very materially in the face of the fact that they were told that there was a prophylactic which, if used properly, might prevent contamination.

We feel justified—I am speaking for myself (this matter has not been brought up recently as a policy of the department)—if these men fall from grace, if they fail to listen to our admonitions and do expose themselves, I can imagine some important man saying to himself: "I am a turret captain, or a gun pointer, or in some other important rating, I have done wrong, and it is my plain military duty to prevent or avert infection, and therefore I must use this prophylactic." That is commonly their mental attitude. If these measures are employed within six hours they are practically universally effective.

Mr. ROBERTS. Are they at all effective after six hours?

Dr. STOKES. In a great many cases; yes, sir. There are cases, of course, where the men have had 48 hours' leave, and have been exposed, and it is then too late to do much for them.

Mr. WILLIAMS. In what way do you know that it is effective if administered within six hours, and how do you know that they have been actually exposed to venereal disease?

Dr. STOKES. We had at a training station 50 per cent of the personnel infected with venereal disease.

The CHAIRMAN. When was that?

Dr. STOKES. About two or three years ago. It was a very distressing situation. The men could not be transferred, and they were literally ineffective in a military sense. In combating this situation each individual who went ashore and became infected was required to state the source of his infection, if possible. The local health authorities were communicated with, the source of infection was traced out, and that source was corraled and quarantined. As a

result of these procedures and lectures the percentage at that station has dropped from 50 per cent down to less than 5 per cent, and that is about the percentage of infection at that station now. The present infections come largely from clandestine exposure, where the source can not be definitely traced.

Mr. WILLIAMS. That does not quite get at my question. The mere contact does not necessarily mean exposure?

Dr. STOKES. No.

Mr. WILLIAMS. Then how can you tell?

Dr. STOKES. There have been a number of experiments carried on in various laboratories where the eyes of rabbits have been infected with gonococci and the preventive measures have been employed and there has been no infection. Following this experiment has been a control experiment, where the preventive has not been used and where infection has followed.

The CHAIRMAN. On page 66 I notice that you have inserted some new language with reference to the little appropriation of \$15,000 for the "transportation of remains," "and shall be available until used." What is the necessity of that new language?

Dr. STOKES. Well, very often we have remains on foreign stations; in fact, that was really the purpose of this appropriation, as I understand it, when it was instituted, in 1898 and 1899, to bring home the remains of those who died on foreign stations. We can not be apprised of these deaths, or, at least, the time the remains must be interred in some foreign countries where the law requires their remaining so interred for at least a year, and then they must be prepared to be transferred home, and these transfers are made out of the appropriation under consideration.

Mr. ROBERTS. Mr. Chairman, a suggestion was made, as you will recall, that this item be also transferred to the Bureau of Navigation. Has Admiral Blue changed his views?

The CHAIRMAN. Yes, sir; he said that it should be left as it was.

Doctor, I believe that finishes your part of the bill. You have asked no increases. I will ask you if you have any suggestions which you wish to offer relative to the improvement of the service in the Medical Department?

Dr. STOKES. I want to say that the Secretary has taken up educational work in the personnel. At first sight it was in a measure surprising, but as we had conferences with the Secretary his intention was made clear to us, and these educational methods are to be employed to make the men better fitted for their activities in a military way. They begin at the training stations, they are carried on board ship, and carried on throughout the men's enlistment. The instruction will be continuous and progressive. Aside from the military feature of it, the preparation of little textbooks is now under way. They are elementary, and they make the instruction progressive and continuous, and they make a man who gets a higher rating better fitted to fill that rating. It is the sort of activity we have had in the medical department for the last three years, beginning at the training stations and continuing on board ship, regular periods of instruction, instructions at the hands of the medical officers. The Hospital Corps men go from the ships of the fleet to the hospitals and they are there trained by the medical officers, the pharmacists, the stewards, and the members of the women's nurse corps. They take

to that sort of thing very kindly. I have had no end of inquiries from people in civil life as to our methods of training. They run across men who have been through the four-year enlistment, and they have found them exceptionally efficient.

These activities involve commissary problems, problems of pharmacy, instruction in the preparation of patients for operations, operating-room technique, the handling of people in bed, the care of the helplessly sick, the care of the unconscious, and a thousand and one activities that are indulged in, and these men are trained not only on board ship, but at the bedside and in actual contact with the sick. When I came into office there was a training school for men nurses where something like 60 picked men got training annually. To-day every man gets it, every hospital apprentice goes to the training station and is trained with the seamen apprentices, and if he is temperamentally or physically unfit he is weeded out. These men, as I say, are trained continuously on the ships and in the hospitals.

I would like to say a word about first aid. I hope I am not taking up too much time?

The CHAIRMAN. No, sir.

Dr. STOKES. First aid given by divisional or line officers sounds rather unusual, but the idea is this: That if the officer who teaches the men to point the guns instructs them in first aid, they take it as a part of the military game. The theory is self-help first; that is, if a man, for example, is wounded in the forehead in action and he bleeds so that the blood runs down over his face and chest, the sight may be appalling and demoralizing. His first duty is to check the hemorrhage with a first-aid dressing, which he can do if he is properly trained, and then go back to his station. The next feature of the theory of first aid is assistance from others, if the man is so wounded that he feels that with assistance he can promptly get back to his station. If he is so seriously injured that he can not go back, then it is his duty to get out of the way, so as not to interfere with, for instance, the firing of a gun.

This is of prime importance from a military point of view. If a man is seriously injured, he should not cry out for help. He must not demoralize the gun crew, as they are certain to be if he does that, but he must be taught that his best safety, so to speak, lies in getting out of the way and waiting until the action is over, when competent attention and care will be given him. If he is handled hurriedly by unskilled hands, he may be taken to a dressing station and more harm than good result. If he waits until the action is over—I have devised a battle plan, which has already been outlined before the committee, which has to do with the care of the wounded on the firing line by skilled surgeons who have not been under fire—he will get the advantages of the best treatment possible. That is the scheme of first aid as now employed and operated by the line officers. The line officers and the division officers are instructed in this work by the medical officers. The checking of hemorrhage and resuscitation of the apparently drowned are also taught.

Mr. WITHERSPOON. Does not a wounded man report to his superior officer that he has been wounded?

Dr. STOKES. He should look out for himself as far as he can, and in a restricted place like a turret the disabling of a man may make a break in the activity of the gun. So it has been recommended put-

ting additional men in the turrets to replace others who may fall out or to render assistance to some who require first aid.

Mr. WILLIAMS. What provision is made for those who are seriously injured?

Dr. STOKES. They are taught first aid, they are taught to apply the dressing to check hemorrhage, and they are also taught how to check hemorrhage by tourniquets or other means. They are also taught the resuscitation of the apparently drowned. Some years our casualties from drowning equaled the casualties from disease and injury. A midshipman is not given his diploma to-day unless he can swim, and they are taught to swim in rough or troubled water. On the hospital ship and at various stations we have apparatus, or motor devices, to resuscitate the apparently drowned. The men are taught simple methods, and they are taught to resuscitate men who become unconscious. This psychological feature of not demoralizing others by calling for assistance is of great importance.

Mr. WITHERSPOON. Is this also taught in the Army?

Dr. STOKES. I presume it is.

Mr. WITHERSPOON. Last October the War Department ordered a company of soldiers to come out to my town. Before they got there the train went through a trestle—perhaps you remember reading about that?

Dr. STOKES. Yes, sir; I do.

Mr. WITHERSPOON. And nearly every man on board was wounded and a great many of them killed. I did not see it myself, but I saw a number of parties who lived near the wreck and who went to it, and the thing that seemed to impress them more than anything else was that they never heard one single man among all that company moan or give any expression to his pain. Some of them were under the débris and it took hours to get them out and some of them died soon after they were taken out, but they never heard a groan.

Dr. STOKES. In an address on the psychology of naval warfare at the Naval War College, I strongly urged that every officer should become familiar with the sight of blood. Now, one may be as courageous as can be, but in the presence of bleeding or of mutilation may become faint. This can be in many instances overcome. This suggestion excited a great deal of discussion. One officer said that he had been squeamish in the presence of blood, while in actual battle, with men killed and wounded about him, he had no such feeling. In reply it was suggested that if he had been held in reserve and not actually fighting a ship, and yet was under fire, the thrill of battle would not have existed and he might have felt the same squeamishness in the presence of blood or mutilating wounds. I want to impress upon the committee the fact that we serve in the field just as the Army does. We have to be familiar with field sanitation and every man is under canvas for a period of two or three weeks or more each year. There has never been a war in which the Navy has not taken part on shore.

It is, perhaps, not necessary for me to emphasize the efficiency of the officers and men of the United States Marine Corps in the field. The results that have been accomplished by them in this situation have been marvelous. These ends have been consummated, in my opinion, by cooperation between the line officers and the medical officers and by the military efficiency with which sanitary measures

have been instituted. The Medical Department of the Navy furnishes the sanitary personnel of all marine expeditions.

The CHAIRMAN. I have heard recently that some smallpox broke out on one of the battleships, the *Ohio*?

Dr. STOKES. Yes, sir.

The CHAIRMAN. What do you know about that?

Dr. STOKES. It is probable that the exposure took place before the ship left the Mediterranean. The period of incubation is variable, anywhere from 9 to 14 days, and it may often be carried to 20 days, but the usual period is somewhere between 9 and 14 days. The first report was that two cases had developed and others had been exposed and were suspects. The ship went to Guantanamo, where we have an isolation camp well equipped and prepared for this sort of emergency. Other cases developed and were sent on shore there. It became apparent that there had been pretty universal exposure, and so it was recommended to the department that the ship be sent to Charleston, where the men could be taken out of the ship, the ship thoroughly fumigated, and all precautions taken. These men are all vaccinated on enlistment. An ample supply of vaccine was sent to them as soon as the report reached us and is in their possession now, and I have no doubt that the outbreak will be stamped out readily.

Mr. WITHERSPOON. Do you mean to say that all the men on board the ship had been vaccinated?

Dr. STOKES. Every man is vaccinated at the time of enlistment.

Mr. WITHERSPOON. Vaccination did not prevent this?

Dr. STOKES. It is not an absolute preventative. We may have 3 or 4 per cent who are not protected.

Mr. WITHERSPOON. What proportion of the men on the *Ohio* did have the smallpox?

Dr. STOKES. The last report was that there were six cases, but we may have, although protected by vaccination, varioloid, which is mild and inconsequential. Some years ago in Japan, before vaccination was universally carried out, I had seven cases under my care and three of them had been protected by vaccination and four had not been protected. The four died loathsome deaths. They died with the eruption all over them, including even their mouths and eyes; there was no hope for these unprotected men from the start. Those protected by vaccination were scarcely ill beyond having a pustule here and there.

Mr. BROWNING. Was there not a death on the *Ohio* from smallpox?

Dr. STOKES. I have not had official notification of that. I heard, I think, last night, that there was one death.

Mr. BROWNING. I saw in the paper where there was one death.

Mr. STEPHENS. You say that there were six cases of smallpox on the *Ohio*? How many men are there on the *Ohio*?

Dr. STOKES. Roughly, a thousand, perhaps 900. As I say, they rub elbows at mess and drills and all that sort of thing, and so it seemed desirable to get them out of the ship and to disinfect the ship, because the disease is communicable in the early stages.

Mr. STEPHENS. Only six cases have been reported out of the thousand?

Dr. STOKES. Yes, sir; there may be others develop later.

Mr. ROBERTS. I want to ask the admiral about the appropriation made last year of \$70,000 for the new power plant for the naval hospital at Chelsea. Has that power plant been built?

Dr. STOKES. Plans have been made, as I recall it, and my impression is that it is under way.

Mr. ROBERTS. Can you tell from memory where that plant is located, with reference to the so-called magazine site?

Dr. STOKES. It is to be located southwest of the new hospital building. That is, down toward the old pest house. You will remember where that is.

Mr. ROBERTS. Not on what was called the magazine site?

Dr. STOKES. No, sir.

I want also to say that so far as our returns from the Treasury Department and from the Bureau of Supplies and Accounts go, we have wiped out our obligation against the hospital fund. I found when I came into office an obligation somewhere in the neighborhood of \$1,500,000. By the loyal support of my colleagues in the Medical Department we have been able to square this account up.

The CHAIRMAN. I believe last year we put in a provision prohibiting indebtedness hereafter?

Dr. STOKES. No new construction without consulting the committee, which I was enthusiastically in favor of.

The CHAIRMAN. I understand.

Mr. ROBERTS. Is that hospital at Chelsea built?

Dr. STOKES. It is practically completed.

Mr. ROBERTS. Is it ready to occupy?

Dr. STOKES. It will be within a very few months.

Mr. ROBERTS. Are the fittings all in?

Dr. STOKES. Practically everything. Of course, it depends upon the completion of the power plant.

Mr. ROBERTS. The power plant is the only thing holding it back from occupancy?

Dr. STOKES. That is practically all.

Mr. ROBERTS. Have you had any intimation from the Secretary that the hospital would not be opened?

Dr. STOKES. I have had none.

The CHAIRMAN. We are very much obliged to you, Dr. Stokes.

(Thereupon the committee adjourned to meet to-morrow, Friday, December 19, 1913, at 10.30 o'clock a. m.)

[No. 5.]

**COMMITTEE ON NAVAL AFFAIRS,
Monday, December 22, 1913.**

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL C. J. BADGER, UNITED STATES
NAVY, COMMANDER IN CHIEF, ATLANTIC FLEET.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Badger, who was speaking with me when we were at Guantanamo about the recreation building for the enlisted men at the naval station, Guantanamo, Cuba, and I suggested to the admiral that he should look into the matter and when he was here this winter give the committee his views as to the necessity, propriety, and reasons for that recommendation.

Admiral, the committee will be glad to hear such suggestions as you may be pleased to offer.

Admiral BADGER. At the naval station at Guantanamo, Cuba, the Government maintains a very large rifle range for the training of the men of the fleet, a range which has in the neighborhood of 250 targets on it, one of the largest in this country. Guantanamo is also used as the headquarters of the fleet during a certain portion of the year for the training of the ships and the men. Guantanamo Bay is far separated from any settled country and there are no means there for the recreation of the men except what can be provided for them on shore in the way of ball grounds and possibly a recreation place where they can go from the ships and amuse themselves with various games.

The CHAIRMAN. During the winter, when the fleet is there, what size of fleet do you have and what is the number of men in the fleet, embracing all?

Admiral BADGER. The number of men varies considerably; but there are during the winter rarely less than 10,000 men and sometimes as many as 20,000 men in Guantanamo Bay with the fleet.

Guantanamo is also generally used as the headquarters for expeditionary forces, and we have had as high as 2,000 marines encamped there awaiting any action that might be required of them by the Government. They remain at the place for several months at a time. The climate is such that it is not conducive to the good health or good efficiency to keep the men too much on board the ships—either the ships of the fleet or the expeditionary ships—and for that reason it is believed to be very urgent that a proper building which will house a large number of men during the recreation hours or to which they can go when they are not actually needed on the range, to escape from the sun and the heat, should be provided. A suitable building, it is believed, can be put up for \$30,000 which will answer the purpose;

and I think that the feeling is universal among the officers of the fleet, and it also had the strong support of the former commander in chief, Admiral Osterhaus, that such a building should be provided.

Mr. BROWNING. Of what material will the building be constructed?

Admiral BADGER. It has to be a large building to accommodate the number of men needed, and it was to be built of light wood, with a corrugated roof; but I have seen since recommendations in regard to some other buildings in that neighborhood, and I think that if the sides were of very thin iron it would last longer.

Mr. BROWNING. I should think that would be preferable.

Admiral BADGER. But that does not really come under me. It would have to have an iron roof, and probably the sides should be iron, but not necessarily corrugated.

The CHAIRMAN. As the commander in chief of the Atlantic Fleet, you have been to Guantanamo Bay and have made personal observations and a study of this matter, as I understand it?

Admiral BADGER. Yes, sir.

The CHAIRMAN. You have been there with the fleet in the practice seasons and know the conditions that exist?

Admiral BADGER. Yes, sir.

The CHAIRMAN. I will ask if it is your mature judgment that it is for the efficiency of the fleet and the comfort of the men that such a building should be erected at Guantanamo?

Admiral BADGER. It is, sir, for the health, comfort, and efficiency.

The CHAIRMAN. At Guantanamo is there any town or village or accommodations other than what is on the naval-station grounds, erected by the Government itself?

Admiral BADGER. No. There is a very small town named Camenera, about 5 or 6 miles away, and there is another still smaller town of a few hundred people, a shipping point for sugar from the interior, but our men are not allowed to go to those places.

The CHAIRMAN. And without a recreation building at the grounds, would not the fact of these towns being 5 or 6 miles away be a curse rather than a blessing to you; would it not be a temptation and an inducement to the men to stray over there?

Admiral BADGER. The inducement is greater when we have no recreation building.

The CHAIRMAN. If you had no building to keep them on the grounds, would not these places serve as a temptation to break up the discipline?

Admiral BADGER. Undoubtedly, sir; and the recreation building would lessen the desire of the men to go out of bounds.

The CHAIRMAN. As I understand you, Admiral, without this building you are out on this barren spot without any opportunity for the employment or recreation of the men indoors?

Admiral BADGER. Exactly; yes, sir.

The CHAIRMAN. And they are left to the exposure of the sun and weather, etc., without proper care?

Admiral BADGER. Yes, sir.

Mr. WITHERSPOON. What sort of recreation would this building be adapted to?

Admiral BADGER. The idea was to have one great room for a general meeting room of the men, for moving pictures, their entertainments, their minstrel shows, or whatever it is they want to do,

with verandas around it, a thoroughly pleasant place to sit and get what breeze there is and be out of the sun, and reading and writing room. We need writing rooms more than anything else in this building, where a man can sit down comfortably and write home. They have not good accommodations on the ships, as a rule. I think in the plans it is proposed to put in some bowling alleys and some pool tables or billiard tables, but I do not think those plans have been fully settled upon yet. There will be space for them.

Mr. WITHERSPOON. Do these men need athletic exercise, or do they get enough exercise in the discharge of their duties?

Admiral BADGER. They do get plenty of exercise in the discharge of their duties, but every man wants to exercise himself according to his own humor, and he will work himself to death on shore in getting ready for track meets or for football or baseball, while the same amount of labor might not be done so cheerfully if he had to do it.

The CHAIRMAN. Admiral, with your experience, taken in connection also with your experience as head of the Naval Academy at Annapolis for several years as superintendent, and your training of young men and your experience and observation of them, it is your deliberate judgment that this is an urgent necessity for the health, comfort, and efficiency of the men in the fleet?

Admiral BADGER. It is, sir.

The CHAIRMAN. Admiral, we are very glad to have had the pleasure of hearing you and also to meet you personally.

Admiral BADGER. I thank you, Mr. Chairman. I hope you will come down and see us again next spring. We have a very nice place down there, but there has been some trouble in getting there, I understand.

[No. 6.]

COMMITTEE ON NAVAL AFFAIRS,

Friday, December 19, 1913.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL RICHARD MORGAN WATT,
CHIEF BUREAU OF CONSTRUCTION AND REPAIR.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Watt, Chief of the Bureau of Construction and Repair.

Admiral, I notice that in the item "Construction and repair of vessels," on page 74, you change the word "aeroplanes" to "air craft." Why do you prefer that change?

Admiral WATT. The change was suggested in order to permit the fullest use of air craft. "Aeroplanes" might be interpreted in its narrow sense, of using only one form of machine. It is entirely possible that the airship may develop, so that if the appropriation permits, we may consider it necessary to experiment with an airship. There are various forms—airships, aeroplanes, hydroaeroplanes, flying boats, etc.—and it was thought that "air craft" was a general term which would cover all forms.

From the construction and repair appropriation for the fiscal year 1913 we expended \$28,031; from the appropriation for the current fiscal year we have expended to December 10, \$26,150.

The CHAIRMAN. I notice that the appropriation asked is the same as last year, \$8,250,000. Did you have any unexpended balance?

Admiral WATT. For the fiscal year of 1913, when the appropriation was \$8,479,000, there was a balance of about \$205,000.

I will append to my hearing the following statements:

Appendix I, statement of expenditures by titles under appropriation "Construction and repair, 1913."

Appendix II, showing "Construction and repair, 1913," expenditures by navy yards and stations.

Appendix III, showing relative expenditures "Construction and repair" appropriations for years 1913 and 1912.

Appendix IV, showing the "Construction and repair, 1914," expenditures for the first five months of the current fiscal year.

Appendix V, showing expenditures by titles under construction and repair allotment of appropriation "Equipment of vessels, 1913."

Appendix VI, showing expenditures by titles under construction and repair allotment of appropriation "Equipment of vessels, 1914," for the first five months of the current fiscal year.

The CHAIRMAN. Last year we reduced it to \$8,250,000?

Admiral WATT. Yes, sir. In that connection, Mr. Chairman, I thought that this diagram might help me to explain the appropria-

tion. I have here a chart on which I have plotted the appropriations as made by this committee for the Bureau of Construction and Repair for the last 10 years. The appropriation for the current fiscal year is less than it has been at any time in 10 years, and at the same time the tons displacement of the vessels in the Navy fit for service—which this appropriation is designed to keep in repair—has more than doubled. It was 618,000 in 1905 and it is 1,260,000 in 1913.

Mr. WITHERSPOON. What is that which has doubled?

Admiral WATT. The tonnage of the vessels.

The CHAIRMAN. The tonnage has increased, while the appropriations have been decreased. We decreased the appropriation last year.

Admiral WATT. To a lower point than at any time in 10 years.

The CHAIRMAN. You had no unexpended balance last year of any material amount?

Admiral WATT. No, sir.

The CHAIRMAN. And during the fiscal year 1915 you will have additional tonnage?

Admiral WATT. Yes, sir.

The CHAIRMAN. Additional tonnage to take care of?

Admiral WATT. Yes, sir.

Mr. ROBERTS. The item you speak of is a part of the \$8,250,000?

Admiral WATT. Yes, sir; that is included in that appropriation.

The CHAIRMAN. Is the information in regard to the repairs to vessels in excess of limitation ready to submit?

Admiral WATT. The information is in course of preparation.

Mr. ROBERTS. Have you any idea what the total will be, roughly, for repairs to ships which were specifically authorized?

Admiral WATT. For the specifically authorized repairs and alterations in excess of \$200,000 there is no additional appropriation—

Mr. ROBERTS. It is a special authorization?

Admiral WATT. It is merely an authorization to make repairs of specified amounts in excess of \$200,000 to specific ships from the current appropriations.

Mr. ROBERTS. I understood that was what the chairman's question related to?

The CHAIRMAN. That is correct.

Mr. ROBERTS. And I was asking if you could tell in a general way how much it amounted to?

Admiral WATT. I can tell you in a general way that it will be materially less than the amount in this bill. I think it will be approximately \$1,000,000 instead of \$1,950,000 as was specifically authorized last year.

The CHAIRMAN. If there is a reduction of \$950,000 on account of that expenditure out of the fund, can the total fund, of which this is a part, be reduced?

Admiral WATT. No, sir.

The CHAIRMAN. For what other purposes will you use it instead of for the authorizations specially provided for?

Admiral WATT. We will use it for the repair and upkeep of the larger number of ships.

Mr. ROBERTS. For the additional tonnage that is coming on?

Admiral WATT. Yes, sir.

The CHAIRMAN. Under the general authority you have without the special authorization?

Admiral WATT. Yes, sir; under the general authority contained in the bill.

The CHAIRMAN. I notice on page 77 that you are increasing the amount that may be used for clerical, drafting, inspection, and messenger service in navy yards, naval stations, and offices of superintending naval constructors from \$858,039 to \$943,100. Please state fully the necessity and the occasion for the increase in this force.

Admiral WATT. Until recently the pay of ship keepers was not included in the classified limit, but the Civil Service Commission has recently directed that when any ship keeper is discharged he is to be replaced by a classified employee. The department accordingly directed that this figure be increased so as to provide for the shift of employees from one class of employment to another.

The CHAIRMAN. So that instead of paying them out of this authorization you have been paying them out of the general funds?

Admiral WATT. Yes, sir.

The CHAIRMAN. This does not increase the general appropriation?

Admiral WATT. It in no wise increases the general appropriation.

The CHAIRMAN. And because of the civil-service regulation they are to be transferred and paid out of this authorization?

Admiral WATT. Yes, sir.

The CHAIRMAN. I notice the following proviso:

Provided further, That the Secretary of the Navy is hereby authorized to enter into contract for the use by the Government of dry docks at Hunters Point, San Francisco, California, one of which docks shall be capable of docking the largest vessel that can be passed through the locks of the Panama Canal, for a period not to exceed six years from completion of such dock, at a compensation of not less than \$50,000 per annum during said period of six years, the right of the Government to the use of said docks in time of war to be prior and paramount: *Provided*, That the construction of the large dock shall be undertaken immediately upon entering into this contract and shall be completed within twenty-four months thereafter: *And provided further*, That said contract shall provide for docking rates not in excess of commercial rates, and for such other conditions as may be prescribed by the Secretary of the Navy prior to entering into such contract.

That is the same proposition that was submitted by the former Secretary?

Admiral WATT. Yes, sir.

The CHAIRMAN. Have you given consideration to this matter and have you investigated it?

Admiral WATT. Yes, sir; I have given careful consideration to it.

The CHAIRMAN. I will ask you to state what recommendation you submit with reference to this proposition?

Admiral WATT. At the present time, should it become necessary to dock one of our large battleships on the west coast, she would have to proceed to Seattle to dock. With the opening of the Panama Canal it is probable that our principal fleet will have periods of duty on the west coast. This provision would permit the docking of these ships at Hunters Point, San Francisco, instead of sending them 900 miles further north.

Mr. STEPHENS. Are the present docks at the Mare Island Navy Yard not sufficient?

Admiral WATT. We can not get the battleships there; and even though the channel were deep enough to send battleships to the yard, the present docks would not take 10 of the last vessels of the fleet.

Mr. STEPHENS. What prevents getting the ships there?

Admiral WATT. Their draft.

Mr. STEPHENS. What depth of water do the battleships draw which you contemplate sending to the Pacific coast?

Admiral WATT. They will draw 27 to 30 feet.

Mr. WITHERSPOON. What is the depth of water which they have at the Mare Island Navy Yard?

Admiral WATT. I understand that they can get a ship drawing 24 feet of water up to the Mare Island Navy Yard at low water and that dredging operations are now going on with an idea of deepening the channel.

The CHAIRMAN. What will the dredging deepen it to?

Admiral WATT. The dredging is being conducted with a view to securing 30 feet at low water.

The CHAIRMAN. My understanding was that they would get a minimum of 30 feet, but the dredging has not yet been completed?

Admiral WATT. No, sir.

Mr. STEPHENS. Is it not very nearly completed?

Admiral WATT. I do not think so. It was begun not many months ago. (Now 12 per cent completed. See Commandant's telegram, page 255.)

Mr. WITHERSPOON. Suppose that one of the largest dreadnaughts should have a big hole in her bottom by running on a rock of some kind, and get a good deal of water in her, what would be the draft, would it not be almost 10 feet more?

Admiral WATT. The increase in draft would depend on the number of compartments to which water was admitted by the damage, and the location of the filled compartments. It might be as much as 10 feet.

Mr. WITHERSPOON. If a battleship should be injured so as to get a lot of water in her, and they got 30 feet of water at Mare Island, you still could not get the wounded vessel in there?

Admiral WATT. No, sir.

Mr. BROWNING. Another point is the distance of the 900 miles.

Admiral WATT. The largest vessel that can dock at the Mare Island Navy Yard is the *North Dakota*, assuming she could get to the yard.

The CHAIRMAN. What is her tonnage?

Admiral WATT. About 20,000 tons.

The CHAIRMAN. You are speaking about a disabled ship which would draw materially more water according to the extent of the damage? To counteract that, it would be possible to some extent to underburden the ship by taking out the stores, freightage, and other things?

Admiral WATT. Only to a very slight extent.

Mr. STEPHENS. Would it be possible to take a vessel drawing 30 feet or even a few feet more up to Mare Island at high water, which occurs twice daily?

Admiral WATT. Yes, sir; I think it would, but there are very few berths in the Mare Island Navy Yard at which a vessel drawing that much water can lie without grounding at low water.

Mr. STEPHENS. But there are berths?

Admiral WATT. We have frequent reports of the armored cruisers grounding at low water at the Mare Island Navy Yard, and the statement of the commandant that it is impossible to put these ships in other berths. It may be that there are one or two berths where they

get deeper water, but I understand that only light-draft vessels drawing less than 25 feet can be berthed without grounding at low water.

Mr. STEPHENS. I understood you to say that vessels were now constructed that would draw 30 feet or more?

Admiral WATT. Yes, sir.

Mr. STEPHENS. Will you name one ship that draws 30 feet?

Admiral WATT. The *Pennsylvania* and battleship 39 will draw 30 feet at full load. The *Nevada* and *Oklahoma* have a normal draft of 28 feet 6 inches and with full load a mean draft of about 29 feet 8 or 9 inches. If there is the slightest trim they will draw 30 feet at the bow or the stern of the vessel.

Mr. STEPHENS. I was informed not a great while ago that there were no vessels in the American Navy and none under construction that would use the Panama Canal and draw quite 30 feet of water.

Admiral WATT. I do not know where you got your information, sir, but I think—

Mr. STEPHENS. I do not remember the particular source, but it was, I think, pretty good authority.

Admiral WATT. The canal, of course, provides for 40 feet of water. The *New York*, *Texas*, *Nevada*, and *Oklahoma* have a normal mean draft of 28 feet 6 inches. When they are laden with stores it is probable that there will be an extreme draft of 30 feet, although by careful trimming of stores and filling of the trimming tanks it may be possible to hold those vessels to an extreme draft of 29 feet and 9 inches.

The CHAIRMAN. When a ship is in motion in the waves it has a dipping motion, has it not?

Admiral WATT. A ship at high speed "squats"—that is the technical term.

The CHAIRMAN. Does it "squat" when it is running at slow speed?

Admiral WATT. No, sir; a vessel would not "squat" running at low speed.

Mr. STEPHENS. Following your statement about vessels of the Navy drawing 30 feet or more of water, is it your opinion, then, that the prominent harbors on the Pacific coast should have a depth of at least 30 feet and probably 35 feet?

Admiral WATT. I should say, sir, that the ships we are going to build in the future will have even deeper drafts than 30 feet, and the depth of prominent harbors should be at least 35 feet.

Mr. STEPHENS. Then, to accommodate some of the vessels now being constructed, the harbors should have something more than 30 feet of water?

Admiral WATTS. Decidedly so, sir.

Mr. WITHERSPOON. If a vessel will draw 30 feet of water, and if, or you say, when injured to a certain extent, it may draw 10 feet more, or 40 feet, is it not absolutely necessary, if we are really preparing for war, if we are really getting ready to engage in war and not just merely spending money, is it not necessary that it should have 40 feet depth, so that we will be ready for the emergency when it comes?

Admiral WATT. It would be very desirable.

Mr. WITHERSPOON. It would be very desirable, of course, but is it not necessary if we are going to act sensibly about it?

Admiral WATT. On the Pacific coast at the present time a ship drawing 40 feet of water can be taken to the Puget Sound yard.

Mr. WITHERSPOON. Is not that the only kind of a yard that it is sensible for us to have, one that will accommodate all the ships?

Admiral WATT. Every first-class yard should accommodate our largest ship in its extreme condition.

Mr. WITHERSPOON. It does not make much difference about providing for battleships unless we have wars, does it? Is not that the very thing you are trying to provide for?

Admiral WATT. All those things go together. You must have depth of water, ships, dry docks, water front, etc. Of course, you should have a depth of water that will take care of a damaged ship.

Mr. ROBERTS. What depth will there be at the dock at Hunters Point that it is proposed to build?

Admiral WATT. I understand that there will be unlimited depth. The bill provides that the dock must take care of any ship that can go through the Panama Canal locks, so that means at least 40 feet of water.

The CHAIRMAN. The locks at the canal, if emergency requires, could go up to 45 feet?

Admiral WATT. Depending upon the maximum level of water in Gatun Lake, the locks will pass vessels drawing as much as 45 feet.

Mr. WITHERSPOON. About this proposition, as I remember the proposition when it was submitted to us at the close of the last Congress, it was suggested that if we accepted this proposition, then when we put one of our ships into this proposed dry dock we would have to transport the men, tools, and implements to do the work from the Mare Island Navy Yard up there. Do you think that is a very wise arrangement, to have a navy yard at one place where the work can not be done because the water is too shallow and have to send the men, tools, and everything 30 or 40 miles to do the work?

Mr. ESTOPINAL. What is the distance from Hunters Point to Mare Island Navy Yard?

Admiral WATT. I think it is about 25 miles.

Mr. WITHERSPOON. My recollection is that they said about 30 miles.

Admiral WATT. The last clause of the proposed contract is supposed to take care of that situation. The company is willing that the Government shall send men from the Mare Island Navy Yard or is willing to do the work for the Government. It was understood that the last clause would cover. It reads:

That said contract shall provide for docking rates not in excess of commercial rates and for such other conditions as may be prescribed by the Secretary of the Navy prior to entering into such contract.

Mr. WITHERSPOON. If this company is to do the work for us, then we have no further use for the Mare Island Navy Yard?

Admiral WATT. We have a good many ships to repair and maintain that draw less water and can readily proceed to Mare Island yard.

Mr. ROBERTS. There are a good many ships that can go to the Mare Island Navy Yard?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. Ships that do not count?

Admiral WATT. No, sir; important units, such as destroyers and submarines. There is now a monitor on that coast and there are several armored cruisers that have repeatedly been to the yard.

The CHAIRMAN. We have a number of battleships that run down to 22 and 23 feet?

Admiral WATT. Some of the earlier battleships of the reserve fleet can go to the yard, possibly, but when the Atlantic Fleet made its cruise around the world eight of those battleships were docked in the private dry dock at Hunters Point because they could not go to the Mare Island Navy Yard. At that time we docked 10 ships at Hunters Point, and the charge for the use of the dock was \$41,000.

Mr. WITHERSPOON. When was that?

Admiral WATT. In June of 1908.

Mr. STEPHENS. If this dry dock were built at Hunters Point, is the building of a warship on the California coast restricted to the particular company now located there, or will it admit of the building there of a warship by another company?

The CHAIRMAN. This contract does not relate to the building of ships; only to the docking and repair of ships.

Mr. STEPHENS. Then let my question apply to the repair of ships by any other company than the one now there, if the United States does not do the repairing.

Admiral WATT. I think the proposed form of agreement has to do only with the relations between the Navy Department and this company. I understand your question to be, "Will this prevent another company from repairing a Government ship in the same dry dock?"

Mr. STEPHENS. Yes, sir.

Admiral WATT. I do not think that question has been gone into, but I think it can be taken care of by this concluding clause.

Mr. STEPHENS. In other words, you think the wording of that clause would permit the Secretary to award a contract and have the work done by some other company than the one now located at Hunters Point?

Admiral WATT. I think that can be cared for.

Mr. STEPHENS. Do you think it would be wise on the part of the Government to build a dock and not give opportunity to several companies to bid and do the work?

Admiral WATT. I think, sir, that the Drydock Company can be fully controlled; in the first place, by this agreement with the Secretary of the Navy, and, in the second place, by the proximity of the Mare Island Navy Yard from which workmen could be sent if the proposition as made by the dry dock company were unsatisfactory. It seems to me that the Secretary has the situation fully in his control.

The CHAIRMAN. In the proposition that was submitted a year ago it was stipulated that they would do the work for the Government at a certain price or that the Government might submit materials and they would do the work at a charge of 10 per cent of the actual cost and overhead charges?

Admiral WATT. Yes, sir.

The CHAIRMAN. I have the proposition that was submitted. Has there been any modification of that one in recent proposals?

Admiral WATT. No, sir.

The CHAIRMAN. I will have incorporated in the hearings for the information of the committee the proposition that was submitted last year so as to have it before us at the present time, and also the letters of the former Secretary of the Navy and the chief of bureau.

(The papers referred to by the chairman follow:)

DEPARTMENT OF THE NAVY,
Washington, February 12, 1913.

MY DEAR MR. CHAIRMAN: I wish to invite the consideration of your committee to the conditions that exist on the Pacific coast of the United States relative to dry-docking facilities.

Upon the completion of the Panama Canal it is probable that the time of the fleet will be about equally divided between the Atlantic and the Pacific coasts, and there should be provided in the vicinity of San Francisco, in close proximity to the Mare Island Navy Yard, a dry dock capable of docking the largest vessels of the fleet, it being impracticable to build such a dry dock at the Mare Island yard itself.

The only dry dock on the Pacific coast which will be large enough for this purpose is the one now nearing completion at the Navy Yard, Puget Sound, Wash., about 900 miles from Mare Island.

The dry dock at Pearl Harbor, the completion of which is due about July, 1915, while large enough to accommodate any vessel of the fleet, is located over 2,000 miles from the Pacific coast, and can not, therefore, serve the demands which are likely to arise from yearly visits of our fleet to the Pacific coast.

I have in my annual report recommended the provision of 1,000-foot dry docks on both the Atlantic and Pacific coasts, but have not as yet made specific recommendation as to the location of these docks, and that matter is now under consideration by the department.

Recently, the department has received a proposition from the Union Iron Works, of San Francisco, offering to construct a dry dock at Hunters Point, San Francisco, capable of accommodating any vessel that could pass through the locks of the Panama Canal; to equip and maintain it in an efficient manner; and to give the Navy Department, for a term of years, priority in its use and in the use of two smaller docks which the company now has in operation at Hunters Point. The company will undertake to complete the new dock within two years after the acceptance of its offer. The company asks that, in consideration of this, the department agree to pay for such dockage as may be required for naval vessels, at rates lower than those prevailing in this country, and agree also that the compensation paid by the Government for the use of its three docks shall be not less than \$50,000 a year, during the term of the department's priority. According to the company's estimate, the proposed dry dock, with its equipment, would cost about \$2,000,000. A copy of the company's letter, containing the above offer, is inclosed herewith.

In a general way, this offer commends itself to the department, and I recommend that, in the naval appropriation act for the coming year, the Secretary of the Navy be given authority to enter into a contract with the Union Iron Works Co. for the use of its docks, the terms of the contract, including those which will govern the size and construction of the dock, the duration and terms of the Government's priority, and the rate of compensation to be paid for dockage, including the minimum annual compensation to the company, to remain subject to such adjustment as the department may deem necessary for the proper protection of the Government, but that the term of the proposed contract shall be limited to six years from the completion of the dry dock, and that the rate of compensation for dockage shall not be greater than the rate named in the company's offer, nor shall the amount of compensation guaranteed to the company annually exceed \$50,000.

There is inclosed herewith copy of a suggested amendment to the naval appropriation act for the fiscal year 1914.

Very respectfully,

G. v. MEYER.

HON. L. P. PADGETT,
*Chairman Committee on Naval Affairs,
House of Representatives.*

PROPOSED AMENDMENT.

That for the purpose of obtaining further facilities on the Pacific coast to dock, repair, and alter naval vessels of the United States the Secretary of the Navy is hereby authorized and empowered to enter into a contract with the Union Iron Works Company of California, for the use of the docks of said company at Hunters Point, San Francisco, California, for a period of six years from the completion of a modern dock to be constructed by said company of such size and facilities as to be capable of accommodating any vessel that may be able to pass through the locks of the Panama Canal, and to guarantee said company a sum not exceeding \$50,000 annually for the use of its said docks, to be applied as part payment of docking charges.

JANUARY 17, 1913.

Re Proposal of Union Iron Works with respect to the construction and maintenance of a dry dock at Hunters Point, San Francisco, and the use thereof by naval vessels.

MY DEAR SIR: By direction of the Union Iron Works Co., I beg to submit to you the following proposition:

The Union Iron Works Co. will undertake to construct and operate a dry dock at Hunters Point, San Francisco, in close proximity to the two dry docks which it now has in operation at that place, and to place the facilities of the proposed dry dock and of the two now in operation at the disposal of the Navy Department, for the docking and repair of vessels, upon the following terms and conditions:

I.

General description and dimensions of the existing docks and of the proposed dock.—The blue print which I hand you herewith represents the location and dimensions of the company's dry docks now in operation at Hunters Point (Nos. 1 and 2) and the location and dimensions of the proposed dry dock (No. 3) together with its appurtenances, including the pump house and suction conduits. This plan is drawn to scale and the dimensions of the docks are given by a table on the blue print, entitled "Notes." The location of these docks is ideal, there being a great depth of water close to shore at that point. The land consists of soapstone, which can be excavated easily, and, at the same time, will be impervious to water, thus reducing to a minimum the risk of the dock becoming temporarily unfit for use. An idea of the capacity of the proposed dock (No. 3) can be obtained from the blue print, which represents a vessel 900 feet long, 100 feet wide, and 72 feet molded depth, as she would be, when in that dock, on the blocks.

Your attention is invited to the following features of the plan:

(1) The proposed dock would be provided with a sliding gate, located about midway between the ends of the dock, as well as a floating caisson, located at its entrance. By means of the sliding gate the dock could be divided into two sections, each section being available for use independent of the other, and both of them being available for use contemporaneously independent of each other.

(2) The proposed dock (No. 3) would be equipped with electrically driven pumping apparatus, consisting of four 54-inch main centrifugal pumps and one 15-inch drainage pump; also with four electrically driven capstans on each side of the dock; also with all piping necessary to supply electric current, compressed air, and fresh and salt water. Stairways would be provided, leading from either side of the outer section to the bottom of the dock, through inclined tunnels; also two similar stairways for the inner section and two open stairways at the shoreward end of the inner section.

(3) The dry docks now in operation at Hunters Point (Nos. 1 and 2) are provided with an efficient power plant, which produces the electric and pneumatic power used in their operation and is capable of producing enough power for the operation of the proposed dock in addition to that of the two existing docks. Furthermore, the Union Iron Works has recently entered into a contract with the Pacific Gas & Electric Co., of San Francisco, by which the latter has agreed to supply it with all electric current needed to operate its works and also with power needed for the operation of the docks at Hunters Point, including the proposed dock. By this contract the Pacific Gas & Electric Co. guarantees that it will furnish any amount of current that may be needed for any and all purposes to which the Union Iron Works Co. may wish to apply it. The term of this contract is 10 years.

(4) The proposed dry dock would be equipped with a traveling crane, operated by electric power. By means of a runway or tracks, extending along both sides of the dock, this crane would be available to serve a vessel in the dock, at any point. The crane will have a capacity of 50 tons and will have a reach extending to the middle of the dock, at least.

Docks Nos. 1 and 2 have been found adequate to meet all demands for dockage that have arisen heretofore in the port of San Francisco. They are entirely adequate to meet present demands and there is no certainty that demands will arise in the future which the two existing docks could not meet. At least, there is not sufficient certainty of an increased demand for dockage to justify the Union Iron Works or any individual in making the outlay necessary for the construction and maintenance of the proposed dock, without some assurance of income from the dock, which would enable the company to meet part of the operating expenses and interest charges. It is thought, however, that, with the opening of the Panama Canal, vessels of the Navy and merchant vessels will call at San Francisco, which could not be accommodated in either of the existing docks, and, with a guaranty of income such as that described

below, the Union Iron Works Co. would be willing to risk an investment estimated at \$2,000,000, in a drydock having a capacity sufficient to accommodate any vessel which could pass through the locks of the Panama Canal.

If the proposed dock should be built, it is the purpose to make it first class in every respect and, at least, equals in capacity and efficiency to the largest and best docks now in existence, here or abroad, so that it could provide safe and efficient docking facilities for any vessel that might call at the port of San Francisco.

II.

Conditions under which the Union Iron Works Co. will undertake to construct and operate the proposed dock.—The terms and conditions upon which the company offers to construct and maintain the proposed dock are these:

(1) It will begin the construction of the dry dock as soon as possible after the preparation and approval of detailed plans thereof and the execution of a contract between the United States and the company providing for the dockage and repair of vessels of the Navy upon the terms and conditions named below and will complete the structure in conformity with the plans and put it in operation within two years after their approval and the execution of the contract.

(2) In consideration of the payments to be made for dockage and the guaranty of revenue hereinafter described, the company will agree that, throughout the term of the contract, the Navy Department will have priority in the right to use any one or more of the three docks when desired for the accommodation or repair of naval vessels. In time of peace the priority enjoyed by the United States will be subject to the right of the company to complete work in progress upon other vessels which may be contained in its docks at the time when any naval vessel makes application for dockage. This limitation of the Government's priority is believed to be reasonable and necessary to meet the exigencies of the other business of the dock. It is believed, too, that this limitation would never occasion inconveniences to any naval vessel, for it is highly improbable that all three of the docks would ever be occupied by merchant vessels all requiring extensive repair. In time of war the requirements of the Navy would be considered paramount and would be accorded absolute priority.

(3) The charge to the department for the use of the proposed dock or either of the two docks now in operation would be at the rate of 6½ cents per ton of displacement per day for each day that a naval vessel may occupy one of the docks; the length of occupancy to be reckoned from the time that the dock is made available for the naval vessel's accommodation until she leaves it. This rate is regarded as fair and reasonable and has been fixed by the company after due consideration of the considerable amount of dockage that the Government will probably require for its naval vessels after the Panama Canal shall have been opened. Six and one-half cents per ton of displacement per day would be considerably less than the rate charged by the Government for the docking of commercial vessels in naval dry docks and less than the rates charged by commercial docks. The company is aware that it is the practice of the Navy Department to compute its charges for docking naval vessels on a basis quite different from that which governs its charges for docking merchant vessels and from the basis of charge prevailing in private establishments. According to the practice of your department, naval vessels are not charged for what are termed "lay days" i. e., the time that the vessel remains on the blocks. That may be a suitable basis of charge for the department to adopt with respect to naval vessels and naval docks, because the docks are built and operated at the Government's expense, and it is optional with the department to charge its vessels for their use or not. You will appreciate, however, that such a basis would not be possible where, as in the present case, a dock is to be built and operated at private cost and risk and where the owner must depend upon the income derived from the dock to defray expenses incident to its operation and to pay interest charges on the capital invested.

(4) Before the company will be required to commence the construction of the proposed dock, the United States will enter into a contract with it, undertaking to pay it at the above rate for dockage furnished to naval vessels and guaranteeing that the compensation paid by the Government for the use of all three docks will be not less than \$50,000 in any one year, and if the compensation actually paid to the company for the dockage of naval vessels during any one year shall be less than \$50,000, the difference shall be paid to the company by the United States at the end of that year. The term of the contract shall be 10 years from the date of the dock's completion and the company will guarantee to complete and make it ready for operation within two years after the signing of the contract: *Provided, however, That if the proposed dock should, at any time, fall into a condition in which it would not be*

safe and efficient for the accommodation of naval vessels and such condition were attributable to the neglect of the company to employ proper and efficient means for its upkeep and maintenance, the company will be liable to forfeit a part of the sum of \$50,000, guaranteed to be paid annually, proportionate to the part of the year during which the incapacity of the dock may continue: *Provided, further*, That, in the event of a strike or standout of workmen employed by the company to operate its docks, the United States may operate them itself, employing its own men for that purpose, and shall thereupon be entitled to offset against the company's charge for dockage and the above guaranty such reasonable sum or sums as the United States may be required to expend for the operation of the docks: *Provided, further*, That for any delays of the company in furnishing dockage to vessels of the Navy, except in cases where docks are in actual use by other vessels, the company shall be subject to suitable penalty, to be deducted from any sum or sums that may become payable by the United States under this contract: *Provided, further*, That for any delays in the completion of repairs that the company may be called upon to make upon a naval vessel, while contained in its drydocks, due to fault or neglect of the company, it shall forfeit all right to charge for the use of such dock during the period of delay.

The company estimates that \$50,000 will represent about one-half of the company's annual outlay for interest upon the money invested in the dock.

(5) By the above contract, the company will agree to do any repair work upon any naval vessel that may be ordered by your department, while she is occupying one of its dry docks, upon the following basis of charge: Cost of raw material to company; add 10 per cent of cost of raw material for handling charges at company's plant; actual cost of labor paid to workmen; add 65 per cent to cost of labor to overhead burden and use of tools; to the sum total of the above add 10 per cent for the company's profit: *Provided, however*, That in cases where the company's actual outlay for labor will be very small as compared with the charge for use of tools, the company's compensation shall be determined by a board of naval officers appointed for that purpose.

When it is considered that the overhead charges that the company would have to meet in performing repair work include many items, such as insurance, depreciation, and interest on capital invested, which do not enter into your department's estimates of the cost of repair work performed by it, we are assured that you will consider the above basis of charge fair and reasonable.

III.

Conditions to govern the construction and operation of the proposed dry dock.—Prior to the signing of a contract for the purposes mentioned in paragraph II, the company would submit to your department for its approval detailed plans and specifications of the dock, its equipment, and appurtenances, and these would be followed in the construction of the dock. While the work of construction was in progress, the company would accord to representatives of your department every opportunity to observe the manner in which the work was being done, to the end that your department might be satisfied of the safety and efficiency of the structure. Furthermore, upon the completion of the dock, representatives of your department would be accorded an opportunity to inspect the dock and its operation in every particular, to assure themselves that it was being maintained in a proper and efficient manner and thus assure themselves that the requirements of the plans and specifications have been fulfilled in every respect. After the completion of the dock and its inspection in the manner just mentioned, representatives of your department would be accorded opportunities to inspect it at intervals of six months or oftener, if desired, and kept in readiness for the safe accommodation of naval vessels. It is submitted that the foregoing plan of inspection and approval would meet all requirements of the Navy Department. Inasmuch as the dock would be built and operated at the cost and risk of the company, and would be owned by the company, there would be no occasion for the approval of the work during its progress.

The company has already made an extensive investigation of the methods of dry-dock construction prevailing abroad. Before beginning the work upon the dock, it would send experts to Europe to inspect and study the construction of the largest and best dry docks to be found in England, Germany, and other countries. It would hope, also, that your department would give it an opportunity to study the plans and specifications of docks recently completed by the United States or now under construction for it.

The foregoing offer is made in the belief that its acceptance would result in benefit to both parties and that it would be to the advantage of the Government to obtain the use of a dry dock in close proximity to the Mare Island Navy Yard, where the

largest naval vessels could be docked, without being required to make any outlay for construction of the dock. In addition, it is believed that the dockage charges would be equal to the amount of the annual guaranty and that the department would be relieved of the responsibility and cost of maintaining the dock during the considerable periods when its use would not be required by naval vessels.

I remain, very respectfully, yours,

JAMES H. HAYDEN,
Attorney for the Union Iron Works Co.

Hon. BEEKMAN WINTHROP,
Assistant Secretary of the Navy, Navy Department.

Mr. ROBERTS. I would like to ask the admiral if he has any knowledge of negotiations between the directors of the port of Boston and the department for the guaranteeing of a certain amount of dockage annually for the new dry dock to be erected in Boston by the port directors?

Admiral WATT. No, sir; I have not. I think in this connection it might be illuminating to put in the hearings the fact that the port of Boston is erecting a very large dry dock and that certain of the steamship companies using the port of Boston have entered into a guaranty of \$50,000 per annum for 20 years.

Mr. ROBERTS. That was my understanding. I also got the impression in some way that the port directors were negotiating with the Secretary of the Navy for some guaranty from the Navy Department to help out the proposition?

Admiral WATT. I have not heard of any such exchange of correspondence.

Mr. ROBERTS. Would a proposition of that kind come to your bureau?

Admiral WATT. Yes, sir. Nothing has been referred to the Bureau of Construction in this connection. We have at the present time at Boston Navy Yard a dry dock that will take nearly all of our battleships.

Mr. ROBERTS. All but 8 or 10.

Admiral WATT. The *North Dakota*, *Florida*, and *Utah* have been docked there.

Mr. ROBERTS. The dock that the port directors are proposing, as I understand, would be large enough to take anything that could go through the locks of the canal?

Admiral WATT. Yes, sir.

Mr. ROBERTS. Approximately the same size as the dock suggested at Hunters Point?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. We have only two battleships completed larger than the *Utah* and *Florida*—the *Wyoming* and *Arkansas*?

Admiral WATT. The *Arkansas* and *Wyoming*. The *New York* and *Texas*—

Mr. WITHERSPOON. They are not completed?

Admiral WATT. The *Arkansas* and *Wyoming* are completed and in the fleet. The *New York* and *Texas* will be completed in the next three or four months.

Mr. WITHERSPOON. The Boston dry dock will accommodate all the vessels we have completed now except two?

Admiral WATT. All the vessels completed at this date except the *Arkansas* and *Wyoming*.

Mr. WITHERSPOON. I would like to have you explain just for my own information an expression which appears in the first clause on

page 74, "For preservation and completion of vessels on the stocks and in ordinary." What does "on the stocks and in ordinary" mean?

Admiral WATT. I think that expression has been incorporated in the appropriation bill probably as long as there has been an appropriation bill. "On the stocks" means on the building slip prior to the launching.

Mr. WITHERSPOON. I have seen them; I know what that means.

Admiral WATT. In this connection "in ordinary" may be taken to mean work on the vessel in the period of her life after launching; that is, after the vessel has been put overboard from the land into the water and is in process of completion, or repair.

The CHAIRMAN. May it not also mean where you have a vessel in commission and it is taken out of commission for repairs?

Admiral WATT. Yes, sir.

The CHAIRMAN. That is an ordinary repair of the ship?

Admiral WATT. The phraseology means work on a ship at all times throughout her life, both prior to launching and after she is in the water.

Mr. WITHERSPOON. Admiral, how many dry docks have we now in the American navy, 22?

Admiral WATT. Twenty docks in use—18 graving docks and 2 floating docks. I do not include the Pearl Harbor or Port Royal graving docks in the total of 20.

Mr. WITHERSPOON. How much of the time are they in use and how much of the time are they idle and have no vessels in them?

Admiral WATT. I will append to my hearing the actual data regarding each dock for the past 12 months. (See Appendix VII.) Every one of our dry docks was in use more than half the time during the fiscal year 1913.

Mr. WITHERSPOON. We have visited all the dry docks from Panama to Frenchmans Bay, and I saw two little frames of targets in one of them, two destroyers in another one, and a small battleship in another one, and the balance of them were all empty. I want to ask you if that is the usual condition of things?

Admiral WATT. No, sir. You visited the navy yards at the wrong period to see the docks in operation. Every ship we have is docked twice a year, the bottom is cleaned and painted, and any little minor repairs made to the bottom. Of course, where there is necessity for a long repair, that ship is the last in the docking list of any group and remains in the dock for the necessary time to have the work done. We have two docking periods, April and October. The division of ships assigned to a yard goes to the yard and each of the vessels in the division is docked in turn. Last year the *Arkansas* was damaged, and was in No. 4 Dry Dock at the New York Navy Yard with work going on upon her for 77 days. At the present time the battleship *New York* is in the large dry dock at New York, and has been for several months.

Mr. WITHERSPOON. Outside of a serious damage to a ship like the *Arkansas* sustained, you just put the ship in the dock to clean the bottom. About how long does that take?

Admiral WATT. We have done everything we can to shorten that interval and at the present we are able to put a battleship in the dock at high water to-day, say, and if the weather is good and there

is no unusual attention necessary to her bottom, we can undock her 25 hours later.

Mr. WITHERSPOON. That takes just about one day?

Admiral WATT. Yes, sir.

Mr. BROWNING. Can you paint her in that time, and everything?

Admiral WATT. We now regard docking as a competitive operation, and every effort is made to shorten the time in dock. We have gotten so far, sir, that we have accomplished docking a division of four battleships in five days.

Mr. BROWNING. It seems to me that the paint would not dry in that time.

Admiral WATT. The ship bottom paints do not need to dry and are better for getting water on them promptly.

Mr. WITHERSPOON. In making the statement which you have promised to make about how these docks are used, please state what part of the time the dock at each navy yard is idle and the time it is actually in use?

Admiral WATT. I can give you that information, sir. (See Appendix VII.)

Mr. WITHERSPOON. I would like to have that fully stated.

Mr. ROBERTS. Am I right in understanding you to say, Admiral, that we have 20 docks?

Admiral WATT. The table on page 801, Pulsifer, 1912, listing 23 dry docks, includes a wooden dry dock at Port Royal which has been abandoned; it also includes a dry dock at Pensacola which was surveyed and sold about two years ago; also the dry dock under construction at Pearl Harbor; so that we have 20 dry docks in use instead of 23.

Mr. WITHERSPOON. You stated, Admiral, that if we did not adopt this provision of having this company construct this proposed dry dock we would have to send our vessels on the Pacific coast 900 miles farther north to Puget Sound. How far did you send the *Arkansas* to New York when she was disabled?

Admiral WATT. About 1,600 miles.

Mr. WITHERSPOON. That is twice as far as you would have to send them on the Pacific coast?

Admiral WATT. You will have no dry dock between Panama and Puget Sound, which is about 5,000 miles.

Mr. STEPHENS. Where was the *Arkansas* disabled?

Admiral WATT. On the south coast of Cuba.

Mr. KELLEY. And, relatively speaking, instead of 1,600 miles along the Atlantic coast to the New York Navy Yard, if the accident had happened on the Pacific coast under the present circumstances it would have made necessary a journey of more than 5,000 miles?

The CHAIRMAN. With the dock completed at Panama it would be half that distance.

Mr. KELLEY. Why was not the *Arkansas* stopped at Norfolk and put into that yard?

Admiral WATT. The commander in chief of the Atlantic fleet ordered the *Arkansas* to return to her home yard—New York.

Mr. WITHERSPOON. Could not the *Arkansas* have gone 5,000 miles just as easily as 1,600 miles?

Admiral WATT. As it turned out, she might have done so, but everybody was very much relieved when she was in the dock.

Mr. WILLIAMS. Was there not another ship in the New York yard that delayed the work?

Admiral WATT. She was docked practically as soon as she reached New York.

Mr. ROBERTS. Did not that delay the ordinary yard work?

Admiral WATT. While the *Arkansas* occupied the dock we could not use that dock for any other ship.

Mr. WILLIAMS. My recollection is that it appears in the record here that one of the gentlemen testified that by mistake she was sent to New York, and it was two months before they could work on her because the dock was occupied. What are the facts?

Admiral WATT. The *Arkansas* arrived at New York Navy Yard February 28 too late in the afternoon to be docked that day, but was hauled into dry dock on the following morning, March 1.

Mr. FARR. Have we a sufficient number of dry docks now for for practical uses?

Mr. KELLEY. Do you mean on the Atlantic coast?

Mr. FARR. Yes, sir.

Admiral WATT. No, sir. If we are going to increase the Navy, we should increase the number of dry docks.

Mr. ESTOPINAL. And increase the size of the docks?

Admiral WATT. Yes, sir. It would be most unwise to start the construction of any large dock that would not take any vessel that could pass through the Panama Canal locks. I do not think that the Panama Canal locks fix an ultimate limit of the size of ships, but it is the limit for a long time to come.

The CHAIRMAN. And it is the limit of transposition from one ocean to the other?

Admiral WATT. Yes, sir.

The CHAIRMAN. Coming back to the proposition for the construction of the dry dock at Hunters Point, under this proposed construction by the Union Iron Works it is estimated that the dock will cost \$2,000,000, I believe?

Admiral WATT. Yes, sir.

The CHAIRMAN. Under the proposition that is submitted and the charges to be made for docking, what is it estimated that the docking annually will probably cost the Government for the use of that dock for the largest ships? The medium ships and the smaller ships can use the Mare Island Navy Yard?

Admiral WATT. Yes, sir.

The CHAIRMAN. What would be the annual estimated cost for docking?

Admiral WATT. That is a very difficult question to answer, because you must make an assumption as to how long a time and how many ships will be on the Pacific coast. If the present Atlantic Fleet were on the Pacific coast, one docking of all the ships of the fleet would cost us about \$50,000.

The CHAIRMAN. You say "all of the ships." Do you mean all of the ships of every character?

Admiral WATT. No, sir; I mean the 21 battleships comprising the present Atlantic Fleet.

The CHAIRMAN. Some of the ships of the present Atlantic Fleet could go to the Mare Island Navy Yard?

Admiral WATT. No, sir; not unless the channel is kept dredged practically to 30 feet depth.

The CHAIRMAN. Assuming that the 21 ships were there, if they were all docked it would cost \$50,000?

Admiral WATT. Yes, sir.

The CHAIRMAN. What would the docking of the ships under ordinary conditions cost, per ship?

Admiral WATT. If the 21 battleships of the present Atlantic Fleet should be docked in the proposed dry dock at Hunters Point and the average stay in dock should be 48 hours, it would cost about \$47,320.

The CHAIRMAN. For the 21 ships?

Mr. WITHERSPOON (interposing). That is just the docking charge?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. That does not cover the cost of repairs?

Admiral WATT. That does not cover the cost of repairs nor the cost of painting; it merely covers the cost of the use of the dock.

Mr. WITHERSPOON. I would like to have you state now, or if you can not, put it in the hearing, about how much more it would cost us to send our men and tools and everything from the Mare Island Navy Yard to do that work up there than it would cost us if we had a navy yard where we could send the ships in and do the work at the navy yard. It would cost some more?

Admiral WATT. Undoubtedly it would cost in addition the pay of the workmen for the time required to transport the men from Mare Island to Hunters Point, or else the expense of subsisting the workmen at the place where the work was being done.

Mr. WITHERSPOON. Can you give us any approximate idea of that increased cost?

Admiral WATT. When the fleet made its trip around the world in 1908 a number of men were sent from the Mare Island Navy Yard to Hunters Point, and subsisted by the Government during the time they were at the Hunters Point yard at a cost of \$1 a day. It was thought that subsistence was cheaper than sending men back and forth each day.

Mr. WITHERSPOON. Why is it necessary to enter into this arrangement for a new drydock to be built there if they already have one where you have had this work done?

Admiral WATT. The maximum capacity of the dry dock now at Hunters Point is the *Connecticut* class of battleships, 16,000 tons displacement. Before the proposed dry dock can be completed there will be at least one ship in the fleet of 31,000 tons. There are now six ships in the fleet of displacements in excess of 20,000 tons each.

Mr. WITHERSPOON. This arrangement is just to provide for the larger ships?

Admiral WATT. Yes, sir; but the agreement gives the Government the use of the two existing docks at Hunters Point in addition to the proposed large dock.

The CHAIRMAN. If we were to dock all of the 21 ships at one time under ordinary conditions it would cost somewhere between \$40,000 and \$60,000 for one docking?

Admiral WATT. It would cost us about \$50,000 for one docking.

The CHAIRMAN. If the Government were to build a dry dock it would cost not less than \$2,000,000?

Admiral WATT. It would cost not less than \$2,000,000.

The CHAIRMAN. What would be your estimate as to what the cost would probably be to construct such a dock at Hunters Point?

Mr. FARR. What size?

The CHAIRMAN. Not less than 1,000 feet in length, not less than 45 feet in depth, and 110 feet in width.

Admiral WATT. I understand that the figure of \$2,000,000 is the cost to the Union Iron Works of the dock.

The CHAIRMAN. I understand that is their proposition, that it will cost them not less than \$2,000,000. I want to get your judgment as to what you think a dock of those dimensions built by the Government would cost?

Mr. ROBERTS. Whereabouts?

The CHAIRMAN. At that point, and if we could get water under these dredging and docking operations at Mare Island, what it would cost there.

Mr. ROBERTS. It makes a difference whether you have to buy land at Hunters Point, or whether you can build on Government land at Mare Island.

The CHAIRMAN. If we had to buy the land at Hunters Point, first?

Admiral WATT. I have no data of the cost of land at Hunters Point. It would cost the Government fully \$2,000,000 to build a dry dock of the proposed size. The cost depends upon the character of the foundations, the nature of the excavations, etc.

Mr. ROBERTS. Have you known a dry dock to be built by the Government for \$2,000,000?

Admiral WATT. We have figures on page 802 of Pulsifer's Navy Yearbook, 1912, showing that No. 4 dry dock at the New York Navy Yard cost \$2,445,000—

Mr. ROBERTS. But, as a matter of fact, there was more money than that put in it.

The CHAIRMAN. That would involve an outlay by the Government of not less than \$2,000,000, upon which the interest charge would be at least 3 per cent?

Admiral WATT. Yes, sir.

The CHAIRMAN. What would be the cost of maintenance per annum of a dock of that kind, including the lighting, pumping, filling, emptying, and all that? That is included, as I understand, in the proposition submitted by the Union Iron Works and is all borne by the company. What would be a reasonable estimate of that cost to the Government per year?

Admiral WATT. The cost of lighting, pumping, and such items to which I understand you refer for docking in a Government dry dock the 21 battleships would certainly be \$20,000, with no allowance for interest on investment, depreciation, etc.

The CHAIRMAN. What would it cost the Government to maintain the dock itself, what is a reasonable estimate? Assuming now that it costs \$2,000,000, what will be about the average per cent of cost of maintenance and repair, etc., on the dock per annum?

Admiral WATT. It might well be one per cent on a first quality of dock. I will obtain figures from the Chief of the Bureau of Yards and Docks.

The CHAIRMAN. My recollection is that Admiral Hollyday, in one of his hearings before us when he was submitting the estimates for

his bureau, said that one of the large items was the repair and maintenance of these large docks and that they cost something like 2 per cent.

Admiral WATT. It would depend very much as to the type of dock. A granite graving dock costs very little to maintain. A steel floating dock might cost as much as 5 per cent. A dry dock which was faced with wood instead of granite would, of course, cost materially more than a dock faced with granite.

The CHAIRMAN. I am speaking of either a granite or concrete dock that would cost, say, \$2,000,000. About what would be a reasonable estimate per annum for the maintenance of that dock and its repair to keep it in proper condition? I will be glad to have you look into that matter, so that the committee may have some definite idea of the cost.

Mr. ROBERTS. There is an annual expense in connection with all these docks—the repairs to the machinery for the pumping and handling of the docks.

The CHAIRMAN. I am including that.

Mr. ROBERTS. And another item is deterioration and repairs to caissons.

The CHAIRMAN. I understand that is all included in the maintenance and repair.

Admiral WATT. The Chief of the Bureau of Yards and Docks has furnished me with the following estimate for annual repairs or maintenance for typical granite-lined masonry dry dock 1,000 feet long, and estimated to cost \$3,000,000:

	Cost.	Annual repairs.		Life.	Allowance for depreciation.	
		Per cent.	Amount.		Per cent.	Amount.
Masonry, body and cut.....	\$2,650,000	0.1	\$2,650	Indefinite.....		
Caisson, steel, dock every two years, paint annually.	125,000	2.5	3,125	40 years.....	2.5	\$3,125
Pumping plant and accessories ¹	225,000	4.0	9,000	20 years.....	5.0	11,250
Average.....		.5	14,775			14,375

¹ Allow \$100,000 for proportionate part of power plant apparatus and electrical connections charged to dock, approximately 1 per cent.

Annual amount required for repairs or maintenance, \$14,775—approximately 0.005 of total cost of dock.

Annual amount which should be set aside for depreciation to provide a fund for replacing the caisson and pumping plant when worn out, \$14,375—approximately 0.0048 of total cost of dock.

Mr. KELLEY. You speak of a dock at Hunters Point capable of taking our largest battleships, to cost \$2,000,000?

Admiral WATT. Yes, sir; at least \$2,000,000.

Mr. KELLEY. Now, the estimate for such a dock at Norfolk is set down at \$3,000,000. Will you please state the necessity for the extra million; where does that come in?

Admiral WATT. Local conditions.

Mr. KELLEY. That is just what I would like to understand, why it would cost a million dollars more on account of the local conditions to construct a dock at Norfolk than at Hunters Point?

Admiral WATT. Hunters Point's location, as I understand, is a location which lends itself readily to economical dock construction. The docks at Norfolk are not so favorably situated.

Mr. KELLEY. Just in what respect.

Admiral WATT. I can not give you the details from personal knowledge. I am a user of the dock and not the builder; but I am informed by the Chief of the Bureau of Yards and Docks that—

* * * The difference in the estimated cost for a dock at Norfolk and one at Hunters Point, Cal., is mainly represented by the difference in cost of the body of the dock. At Hunters Point the dock would be constructed in very soft rock, the excavation being finished with a lining of masonry. The amount of masonry is therefore small and the foundations inexpensive as compared with a dock at Norfolk, which must be founded on piles with heavy masonry walls and bottom.

The **CHAIRMAN.** I will state that gentlemen representing the Union Iron Works came here last year and saw me at the time they submitted this proposition to the department. They said that they expected to build a dock at a cost around \$2,000,000, but not less than \$2,000,000, on account of the fact that they had the depth of water and did not have to do any dredging, and because they had a soil construction that did not require piling, and which could be taken out readily by their dredges, shovels, and things of that character. I asked these gentlemen if \$2,000,000 would build the dock, and they said to me that they hoped to build it for \$2,000,000 with their facilities and experience. I asked them what, in their opinion, it would cost the Government to build a dock at the same place, and they said they thought \$3,000,000. As to why they said that or what they based their opinion on, I do not know. That is my recollection.

What is the length of the New York dock?

Admiral WATT. Seven hundred feet.

Mr. WITHERSPOON. What did that dock cost?

Admiral WATT. \$2,445,000.

The **CHAIRMAN.** What did the dock at Norfolk cost with the enlargement? No, that is hardly a fair test of cost, because there was some duplication of work. We took out the end of the dock and rebuilt it by making it longer. That would not be a fair test. What did the Bremerton dock cost?

Admiral WATT. The cost of Puget Sound No. 2 dry dock was \$2,300,000. The Norfolk dock, extended to 722 feet in length, cost \$1,729,000.

Mr. WILLIAMS. Did your question cover a concrete dock?

The **CHAIRMAN.** Concrete or granite; yes, sir.

Mr. ESTOPINAL. Was that the original cost or after the addition had been made?

Admiral WATT. The addition cost \$529,000.

The **CHAIRMAN.** That is embraced in those figures.

Admiral WATT. The contract price of the dock was \$1,200,000. The contract price of the extension was \$529,000. The total cost of the 722-foot dock was \$1,729,000.

Mr. FARR. Why should there be that difference between the cost of a dock constructed by the Government and such a concern as the Union Iron Works?

The **CHAIRMAN.** I do not know, sir.

Mr. WITHERSPOON. We always pay more when we do it than when somebody else does it.

Mr. FARR. My understanding is that the Government can build warships as cheaply as by contract?

The CHAIRMAN. It has not done it yet.

Admiral WATT. Only in one instance. The gunboats *Monocacy* and *Palos* were built at the Mare Island Navy Yard for materially less money than the one bid we obtained after the usual 60-day advertisement.

The CHAIRMAN. What is their tonnage?

Admiral WATT. One hundred and ninety tons.

Mr. FARR. There is one battleship under construction?

Admiral WATT. We have one battleship, the *New York*, under construction at the New York Navy Yard, which is making excellent progress and is being built very cheaply. It is not possible as yet to state the cost of the *New York*, but the last battleship finished at the New York Navy Yard cost 50 per cent more than was paid for the sister vessel built under contract.

Mr. WITHERSPOON. That was the *Florida*?

Admiral WATT. The *Florida* was built at New York Navy Yard. The sister ship *Utah* was built by contract at Camden, N. J.

Mr. FARR. Has the Government the facilities to build a dry dock compared with concerns in that business?

Admiral WATT. The Government would build the dry dock by contract; the competition would be very wide, and I see little reason for anticipating that the cost to the Government would be more than the cost to a private shipbuilding corporation. There are local conditions in connection with this Hunters Point proposition which make cheap construction feasible. They already own the land on which it is proposed to construct the dock, and they may have a proposition for using the material excavated. All such questions enter vitally into the cost.

Mr. ROBERTS. Does the fact that the Government puts a price on it have any bearing, in your judgment, on the amount of the contract bid?

Admiral WATT. I do not think so. I think there may be times when the shipbuilders have a large number of contracts on hand when they may say, "This contract is attractive if we can get a good price for it; otherwise we do not want it," but the fact that there is a limit placed on the expenditure does not affect the competitive bidding adversely to the Government interests.

The CHAIRMAN. Has the Government ever built any docks of late years?

Admiral WATT. No, sir.

The CHAIRMAN. All of them have been built by contract?

Admiral WATT. Yes, sir.

The CHAIRMAN. So that the Government has no facilities?

Admiral WATT. The Government has no plant for proceeding.

The CHAIRMAN. You would have to start from the initiative up?

Admiral WATT. Yes, sir; we would have to assemble a plant and perfect an organization to do the work.

Mr. ROBERTS. I notice that the table on page 802 purports to give the controlling depth of water from the several navy yards to the sea, mean low water, and I would like to ask, Admiral, if you have in your bureau reliable data on the depth of water at mean low water from the several yards where there are docks to the open sea? In other words, have you in your bureau any reliable data giving the controlling depth of water—and by "controlling depth of water," I

understand that that is the least water—from the Portsmouth Dry Dock to the ocean?

Admiral WATT. Complete data is on file in the Bureau of Yards and Docks.

Mr. ROBERTS. As this has not been brought up to date, I would like to make an inquiry in regard to the controlling depth of water at New York, which is given at 31 feet. I had an impression that there was a greater depth of water from the open sea to the New York yard.

Admiral WATT. I think that 31 feet is correct.

Mr. ROBERTS. Philadelphia is given as 25.5 feet and Norfolk 27 feet.

Admiral WATT. The controlling depth given is the minimum depth at any point from the sea to the yard at low water, and of course every effort would be made to pass such points at high water when the conditions were the best.

Mr. ROBERTS. I supposed they had 30 feet at low water up the Delaware all the way from the sea to the navy yard.

Admiral WATT. This table was revised by the Bureau of Yards and Docks in October, 1912. There may have been improvements in depth of water since that time, but this table was undoubtedly correct in October, 1912.

Mr. ROBERTS. At the Mare Island yard it is only 20 feet, and I had an impression there was a great deal more than 20 feet.

The CHAIRMAN. Some of the officers, I think Admiral Hollyday and one of the other officers, stated to us in some of the previous hearings that they had 23 and 24 feet of water over the bar.

Mr. STEPHENS. They have more than 20 feet at Mare Island at the present time. The table there given refers to October, 1912, and that was probably taken from data that was prepared many months previous to that time.

The CHAIRMAN. I will call upon Admiral Stanford to put in the hearings the present status of the depth of the water.

Mr. WITHERSPOON. What is the depth of the water in the Delaware River?

Mr. BROWNING. The 30-foot project has been completed and they have now started on a 35-foot channel. Congress refused to appropriate until the project was completed.

The CHAIRMAN. The next item is "Improvement of construction plants," and the estimate for Portsmouth is \$10,000, the same as last year?

Admiral WATT. Yes, sir.

The CHAIRMAN. At Boston, Mass., you are asking for \$10,000 instead of \$20,000?

Admiral WATT. Yes, sir.

The CHAIRMAN. The other items are the same, but you ask an increase for repairs at Charleston, S. C., and I will ask you to state if all of these repairs are needed and if they are based upon an estimate that has been carefully gone over.

Admiral WATT. Yes, sir.

The CHAIRMAN. Why the increase at Charleston; what is the work or the necessity?

Admiral WATT. There have been increased activities at the navy yard at Charleston and the commandant has reported additional tools necessary.

Mr. KELLEY. What is the additional work being done there?

Admiral WATT. At the present time the *Baltimore* is being converted into a mine-laying ship at the Charleston Navy Yard. This large volume of work means an increase in the personnel employed at the yard.

The CHAIRMAN. On pages 45 and 46 you will notice a table, and under the distribution of the appropriation as carried for the suspended Bureau of Equipment you get for "hemp, wire, iron, and other materials," etc., \$1,080,000 out of the appropriation. What did you have last year under that item?

Admiral WATT. The total is unchanged.

The CHAIRMAN. And "for the purchase of all other articles of equipage at home and abroad, and for the payment of labor in equipping vessels therewith, and the manufacture of such articles in the several navy yards you get \$443,000, and "Classified service"—that is, for the employment of clerks, messengers, draftsmen, etc.—\$15,000?

Admiral WATT. That is the same as last year.

The CHAIRMAN. And "Contingent," \$2,400. Did you get that last year?

Admiral WATT. Yes, sir.

The CHAIRMAN. Did you have any unexpected balance last year?

Admiral WATT. No, sir; we had an overexpenditure of \$10,000.

The CHAIRMAN. A deficit?

Admiral WATT. No deficit will result. The overexpenditure was met by an allowance from the unexpended balance of another bureau.

The CHAIRMAN. But you had an expenditure above this amount?

Admiral WATT. Yes, sir.

The CHAIRMAN. Will you need this amount this year?

Admiral WATT. Yes, sir; we are getting more ships.

The CHAIRMAN. You have a larger demand than last year?

Admiral WATT. Yes, sir.

The CHAIRMAN. But you are asking for no increase?

Admiral WATT. No, sir.

(Thereupon the committee adjourned to meet to-morrow, Saturday, December 20, 1913, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Monday, December 22, 1913.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL RICHARD MORGAN WATT,
CHIEF BUREAU OF CONSTRUCTION AND REPAIR—Con-
tinued.**

The CHAIRMAN. Admiral, when the committee adjourned the other day I was about to call your attention to the item on page 110, "Construction and machinery: On account of hulls and outfits of vessels and steam machinery of vessels heretofore authorized, to be available until expended." I would be glad to have you tell us what that is to cover. I notice last year the appropriation was \$13,550,728, and this year you are asking for \$11,387,617, a reduction of \$2,200,000.

Admiral WATT. I will append to my hearing the usual letters submitted by the Chief of the Bureau of Steam Engineering and the Chief of the Bureau of Construction and Repair, explaining in detail how those figures are arrived at. (See Appendix VIII.)

The CHAIRMAN. In a general way, how many vessels does that take care of?

Admiral WATT. In a general way, the \$11,000,000 requested provides the amount needed for the fiscal year 1915 to advance the construction throughout that fiscal year of 4 battleships, about 15 destroyers, 2 submarine tenders, 2 fuel ships, and 1 gunboat.

Mr. STEPHENS. Mr. Chairman, on Friday last the depth of water in the channel at the Mare Island Navy Yard was under discussion, and I have here a telegram addressed to Hon. C. F. Curry, a Member of Congress from California, which I would like to read. It says:

MARE ISLAND, CAL., December 20, 1913.

Hon. C. F. CURRY,

House of Representatives, Washington, D. C.:

Depth Mare Island channel, low water, 24 feet; high water, 30 feet; depth, berthing space at quay wall, 17 to 26 feet, low water. Channel is being dredged to 30 feet at low water. About 2,000 feet, or 12 per cent of contract, completed. Entrance to dry docks, 20 to 24 feet, low water.

BENNETT.

I only bring the matter before the committee at this time to show that the depth under existing conditions is 24 feet. I also want to make the statement that the *Independence*, drawing 31 feet of water, entered at Mare Island more than 50 years ago, and that the *California* left Mare Island Navy Yard, March 17 or 27, 1913, drawing 27 feet of water.

I also submit for the record a letter from Howard C. Holmes, a consulting engineer, who has designed and constructed most of the water passenger and freight terminals on the bay of San Francisco, to the citizens of Vallejo, across the channel from Mare Island:

SAN FRANCISCO, CAL., July 24, 1913.

To the Citizen's Executive Committee, Vallejo, Cal.

GENTLEMEN: I am submitting herewith, at your request, maps and plans embodying my ideas as to some of the available sites for a dreadnaught graving dock at Mare Island Naval Station. These plans show four different suggestions as to location, and I will name them in the reverse order of their numbering and desirability.

No. 4 shows a dock 1,030 feet in length, located directly south of present Dock No. 2. No. 3 is located in what is known as Glen Cove, on the Vallejo side of the Mare Island Channel, and is, of course, of the same dimensions. In fact, all docks contemplated are 1,030 feet in length.

No. 2 lies just north of Dike No. 14; and No. 1, which I think the most desirable, is located between Dikes No. 12 and 14 and on the extreme southerly end of the island.

I will not go extensively into the merits of any of the aforesaid dock sites, except those of Dock No. 1.

Dock No. 4 has the advantage of being in close proximity to the two existing docks at the island, but in my opinion is not particularly desirable on account of the uncertain nature of the underlying mud. Most of this, in my opinion, is similar to that which was found under Dock No. 2, to wit, tule, mud, and silt, and would necessitate the use of an expensive self-contained cofferdam and the depositing of the bottom concrete under water.

Proposition No. 3 would be an ideal one were it not for the existence of the channel between the present equipment at Mare Island and the Vallejo Peninsula. In this location there is undoubtedly solid rock bottom and no difficulty would be found in obtaining and maintaining deep water at the mouth of the dock.

Proposition No. 2, at the south end of the island, would (from all the present indications) have a solid rock foundation, but the objection that might be made to this

location would be the fact that a ship entering it would have to pass through the entrance of the Mare Island Channel and that there is but a small amount of room for any approach to the dock without obstructing said channel.

Suggestion No. 1, which I have shown on my second plan (somewhat in detail), is in my opinion the ideal one, from the fact that the reclaimable area in proximity to the dock is unlimited. I have made borings on the site of this proposed plan No. 1, to a depth of 126 feet below what would be the coping of the dock, and have found that the underlying material is well adapted for constructive purposes, both as to foundation and for the purposes of cofferdamming. I found at a depth of from 20 to 60 feet, a stiff, blue mud which was impervious to water; in fact, a 6-inch pipe sunk to that depth, with all the material and water removed from the inside, remained absolutely dry for a period of 24 hours. Some 7 feet below this, or about 67 to 75 feet below the coping of the dock, I found a strata of clean sharp quartz sand, some 10 feet in thickness, and while this material carried water, I found on driving a pile into it with a 4,200-pound hammer, having a drop of 16 feet, a penetration of but 1 inch, and after allowing the pile to stand some four or five hours, it took six blows of the aforesaid hammer, dropping 16 feet, to break the suction and start the pile.

Below this streak of gravel, or between some 75 to 80 feet, I found a layer of stiff blue and yellow clay, which I investigated to a depth of 45 feet. It was necessary in removing this to use a well-boring auger, and the material, when brought up and broken open, showed a perfectly dry interior. A 6-inch hole in this material, some 26 feet below the bottom of the well casing, remained perfectly dry for a period of 48 hours, and the walls of same showed not the slightest indication of caving in that period of time.

I inclose herewith an analysis (accompanied by a letter) of this material taken at a distance of 112 feet from base, or below the level of the coping of the proposed dry dock, made by the well-known firm of Smith-Emery & Co., inspecting and chemical engineers (see Exhibits A and B). This sample was about an average of the material found at that depth.

This material, I am satisfied, would form a firm and stable foundation for the supporting piles and any sheet piling driven into this material would undoubtedly be impervious to water, irrespective of head.

In my detail plan I have shown a number of pile wharves and piers which could be used not only for the storage of material, but as moorings for any battleship or vessel contemplating using the dock or undergoing repairs either before or after docking.

I have also shown a car-ferry transfer slip. This slip is what is known as a standard freight slip, and is susceptible of being used by any and all the car-ferry boats and barges in use on the Bay of San Francisco by the various railroad companies. In other words, a car barge or ferryboat loaded with freight cars could enter this slip and by means of the apron the cars could be transferred from the boat to the shore and vice versa, and distributed at different points on the island. This would do away with the present unsatisfactory method of bringing materials and supplies on barges, necessitating the transfer of the freight from the freight car to the barge, and then from the barge to the wharf.

The depth of water in this vicinity is but 4 feet along the line of the contemplated fill, so that the expense of filling would be merely nominal, and as I said before the facilities for expansion are unlimited.

I have made some soundings at the outer line of the dike and contemplated approach to the dry dock, and found the depth to be from 30 to 32 feet directly on this line, and greatly in excess of that channelwards.

This location is well sheltered from the prevailing winds of both winter and summer, being under the lee of the island and protected from the prevailing northwest winds in the summer time and from the severe southeast winds of winter by the Contra Costa Hills.

It also has this advantage that the water in this location contains such a large percentage of fresh water brought down by both the Sacramento and San Joaquin Rivers and other fresh-water streams, that wooden-piled structures are immune from the attacks of marine pests, namely, the limnoria and teredo, and that ships lying in these waters very rarely foul, as marine life does not thrive in the waters in this vicinity. You are no doubt aware that all iron vessels foul very rapidly in the waters of the lower bay.

It is contemplated that the foundation for this dock will be piles. None of the aforesaid piles will be strained in excess of from 18 to 20 tons each, which would give them a factor of safety of from 2½ to 3. In the various graving docks used by the United States Navy, out of 18 docks 13 of them have a pile foundation.

In discussing the matter of dry docks with your committee, the question was raised as to the desirability of having 40 feet of water over the sill of the dock, anticipating

a battleship or cruiser in distress drawing this amount of water. While my sketch and suggestion shows that amount of water, I find in looking over the reports of the United States Bureau of Docks and Yards that there is no dock in the United States, either floating or graving dock, which has an excess of 30 feet over the sill at high water, except the one at Puget Sound, Dock No. 2, which is still in course of construction and contemplates a depth of 35 feet at high water. In fact, the only dock in the world that has a depth in excess of 40 feet at high water is the one belonging to the British Government at Portsmouth. The only other one approaching this is Dock No. 2 at Gibraltar, which has a depth of 38 feet over sill at high water, and, of course, you readily understand that a ship drawing 40 feet of water could only enter the harbor of San Francisco through the north channel at extreme high water.

However, be this as it may, if 40 feet over the sill is desired at Mare Island, it is easily obtainable.

As regards the cost of these contemplated structures—a dock sufficient for all purposes, of the dimensions shown (dock proper, pumping plant, and caissons)—I think a conservative estimate would be \$1,750,000, and that the piers, car-ferry slip, filling, sea wall, dredging, etc., should not cost to exceed \$1,000,000, making a total of \$2,750,000.

Respectfully submitted.

HOWARD C. HOLMES, *Consulting Engineer.*

EXHIBIT A.

SAN FRANCISCO, July 23, 1913.

MR. HOWARD C. HOLMES,
112 Market Street, San Francisco.

DEAR SIR: We inclose herewith laboratory certificate No. 26325 covering analysis and test of sample of clay received July 19, 1913, marked: "Mare Island, 112 feet."

The mechanical analysis shows that this sample is composed of 63 per cent of clay and 31½ per cent of sand. The sand is rather coarse grained and largely quartz.

The chemical analysis shows the clay to be a true plastic clay.

This mixture of clay and sand makes a formation dense and impervious to water.

Yours, very truly,

SMITH, EMERY & Co.,
Chemists and Chemical Engineers.

EXHIBIT B.

LABORATORY CERTIFICATE.

JULY 22, 1913.

Laboratory No. 26325.

Sample: Clay.

Received July 19, 1913. Marked "Mare Island, 112 feet."

Submitted by Mr. Howard C. Holmes, 112 Market Street, San Francisco.

Mechanical analysis.

	Per cent.
Moisture.....	5.5
Clay.....	63.0
Sand.....	31.5

100.0

Chemical analysis.

	Per cent.
Silica (SiO ₂).....	58.76
Alumina (Al ₂ O ₃).....	18.76
Iron oxide (Fe ₂ O ₃).....	7.56
Lime (CaO).....	1.88
Magnesia (MgO).....	2.87
Loss in ignition.....	7.80
Alkalies (by diff.).....	2.37

100.00

Respectfully submitted.

SMITH, EMERY & Co.,
Chemists and Chemical Engineers.

Mr. STEPHENS. Mr. Chairman, Hon. Charles F. Curry, the Representative from the Vallejo district, would like to address this committee concerning the Mare Island Navy Yard at any time the committee would like to hear him; and I ask an audience for him at the proper time.

The CHAIRMAN. All right, sir.

The next item, Admiral, is "Increase of the Navy; torpedo boats: On account of submarine torpedo boats heretofore authorized, to be available until expended," \$1,685,717. Last year we appropriated \$2,058,363. How many torpedo boats heretofore authorized are to be taken care of?

Admiral WATT. The sum asked for, \$1,685,617, will advance the construction in the fiscal year 1915 of 24 submarines. The amount required on each submarine is contained in the statement appended to my hearing, Appendix VIII.

The CHAIRMAN. The next item is, "Increase of the Navy; equipment; toward the completion of equipment of the vessels heretofore authorized, to be available until expended,"—

Admiral WATT. Last year there was appropriated under this item for ships "heretofore authorized," \$175,000, and for ships "herein authorized," \$255,000; in all, \$430,000. For the fiscal year 1915 there is an unexpended balance sufficient to care for this work. Funds must be appropriated, however, for any new construction authorized.

Mr. WITHERSPOON. What does "equipment" mean?

Admiral WATT. Equipment in this sense provides the galleys, ranges, bake ovens, awnings, canvas work, anchors, chains, rope and cordage, navigational instruments —

The CHAIRMAN. And battle compasses, also?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. Have we not a factory that manufactures the rope?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. We do not have to pay the factory?

Admiral WATT. This appropriation reimburses the factory for such part of the output of the factory as goes to the new ships.

Mr. WITHERSPOON. This is an appropriation apparently for the navy yard at Boston?

Admiral WATT. "Increase of the Navy, equipment" pays for such part of the product of the ropewalk at Boston as goes to the new ships; which, of course, is only a small part of the output of the factory.

Mr. WILLIAMS. What is the purpose of putting in items of this character under a heading which renders it so difficult to keep tab on the various appropriations for various purposes? Why is not the appropriation for the rope factory made a separate item?

The CHAIRMAN. Simply because there are a good many bureaus and each bureau deals with the rope factory. This is only the amount which is set apart as necessary to furnish the equipment for the new ships as they are authorized from year to year. It does not apply to refurnishing the old ships or supplanting the rope and equipment worn out in the Navy as it runs along from year to year. This is only for the new ships which are authorized.

Mr. WITHERSPOON. But, Mr. Chairman, the point about it is that we are supposed to have an appropriation somewhere in this bill to maintain the factory that we saw at Boston?

The CHAIRMAN. It is paid by buying material from the factory out of these various appropriations, part for one bureau and part for another, and they run the factory, but there is no specific appropriation for running that factory.

Mr. WITHERSPOON. There is not?

The CHAIRMAN. No, sir.

Mr. WILLIAMS. In this system of appropriations, is it possible to get duplicate appropriations for the same purpose?

Admiral WATT. I should say not, sir. There is a revised statute which prohibits the use of any general appropriation for any specific purpose when there is a specific appropriation for that specific purpose, and said statute would unquestionably operate to prevent the use of two appropriations to accomplish the same thing.

Mr. WILLIAMS. It can not be the purpose of making this subdivision to conceal what you would have to ask for for any particular purpose?

Admiral WATT. No, sir. It is to make the purpose of each appropriation plain. A new ship is provided under various appropriations. We have "Increase of the Navy, construction and machinery," which provides the hull, the propelling machinery, and the auxiliary machinery of the ships. We have another appropriation, "Increase of the Navy, equipment," which provides the anchors, chains, galleys, compasses, navigational instruments, canvas work, cordage, etc. We have another appropriation "Increase of the Navy, armor and armament," which provides the guns and armor for the new ship. It would, of course, be possible to provide for all new ships under one appropriation, simply "Increase of the Navy"——

The CHAIRMAN. That would leave to the Secretary of the Navy a lump sum to be expended as he saw fit?

Admiral WATT. Which he could distribute as he saw fit. I think the present phraseology and subdivision of the appropriation act results in absolute compliance with the intentions of the Naval Committee which a lump-sum appropriation might not secure.

Mr. WILLIAMS. I assume my confusion has arisen from my want of familiarity with the subject.

Admiral WATT. I understand, of course, sir, and I want to clear up any of the points I can.

The CHAIRMAN. The next item is "Increase of the Navy, armor and armament." Does that come under you or under the Chief of the Bureau of Ordnance?

Admiral WATT. Under the chief of the Bureau of Ordnance.

The CHAIRMAN. I believe that is all you have to deal with, Admiral, under "Increase of the Navy." Are there any suggestions which you wish to submit to the committee?

Mr. BROWNING. I asked the Admiral the other day to append to his hearing a statement of the ships of the fleet, their condition of service, equipment, etc., and he said that he would do so.

Admiral WATT. Please note Appendix IX.

Mr. TALBOTT. Can not you add to that the percentage of completion?

Admiral WATT. Appendix X gives the percentage of completion of "Vessels of construction."

The CHAIRMAN. I believe that completes the estimates in which you are interested, Admiral. We are very glad to have had the pleasure of having you with us again, sir.

Admiral WATT. I thank you, Mr. Chairman.

(Thereupon, the committee adjourned.)

(The chairman of the committee requested Admiral Watt to append to his hearings answers to the following questions:)

Question 1. Please define what constitutes a naval base.

Admiral WATT. The General Board of the Navy defines "a naval base" as "generically a center from which a fleet can operate and be maintained." Naval bases are permanent or temporary. A temporary base is usually called an "advance base." A permanent base should have ample docking and repair facilities. Among the requisites for a naval base are the following:

(a) It should be strategically located, sufficiently far from the sea to prevent its being bombarded by an enemy's fleet, and behind ample defenses independent of the fleet.

(b) It should be on deep water, with an approach channel that can not be readily obstructed.

(c) It should be close to a good labor market.

(d) It should have good communication, both by rail and water, with manufacturing and supply centers.

(e) It should be capable of furnishing quickly sufficient coal, fuel oil, provisions, and other supplies for naval vessels.

(f) The climate should be equable and the location should be reasonably safe from hurricanes and tidal waves.

(g) It should have sufficient means for the upkeep and repair of the fleet, i. e., the necessary machinery plant, berths, dry docks, etc.

Question 2. Ought geographical and strategic position and proximity to the sea be considered in determining the suitability of any station for such a purpose?

Admiral WATT. These considerations most certainly should be given careful attention in determining the location of any fixed naval base.

Question 3. Please give briefly the reasons why the Norfolk yard should be made a great naval base.

Admiral WATT. The lower Chesapeake is a natural naval base and no other yard on the Atlantic coast is so admirably situated strategically, or so well meets the essential requirements, as given in answer to Question 1, of a navy yard necessary to a fixed naval base as does Norfolk.

Admiral Mahan, in "Naval Strategy," 1911, pages 169-170, states:

Chesapeake Bay and New York, on our Atlantic coast, are two ports clearly indicated by nature as primary bases of supply, and consequently for arsenals of chief importance. For these reasons they are also the proper ports of retreat in case of a bad defeat, because of the resources that should be accumulated in them.

Question 4. Is it practicable to make the Norfolk yard a station where ships can easily go on short notice and be docked, repaired, coaled, supplied, and sent out with a minimum loss of time?

Admiral WATT. It is entirely practicable to so fit the Norfolk yard. At present ships can not be coaled at this yard, but get coal from the commercial piers at either Lamberts Point or Sewells Point. There is at present only one dry dock available for battle-ships at the Norfolk Navy Yard, so that, while this yard (considering

the commercial coaling piers) can now on short notice repair, coal, and supply, with a minimum loss of time, vessels of the fleet, it can not dock them without more or less time being lost on account of its limited docking facilities.

Question 5. Does the department's experience with foundations of dry docks and other structures at the Norfolk yard lead to the conviction that subsoil conditions at that station are favorable to the economical construction of dry docks there?

Admiral WATT. As far as is known, conditions are favorable for economical dry-dock construction.

Question 6. Considering climatic conditions at Norfolk yard, its convenience with reference to labor and material, and its location, please state what reasons there are, if any, why a dry dock can not be constructed there as cheaply as at other stations.

Admiral WATT. There are no reasons known why a dry dock can not be constructed at Norfolk practically as cheaply as at any other navy yard.

Question 7. Please state the reasons, if you know of any, why the channel in front of the yard at Norfolk can not be so widened as to meet all requirements for naval purposes.

Admiral WATT. The channel immediately in front of the navy yard is narrow. It can be widened by cutting away the river bank on the side opposite the navy yard, and the channel deepened by dredging. Much of the river front opposite the navy yard is owned by private parties. It is understood that the price at which this property is held is high. There are no physical reasons to prevent widening of the channel in front of the navy yard. It is only necessary for the Government to purchase the property abreast the navy yard.

APPENDIX No. I.

Statement of expenditures under appropriation "Construction and repair, 1913," from July 1, 1912, to June 30, 1913.

	Labor.	Material.	Indirect.	Total.
Titles D and P, repairs to such integral parts of a ship, ordinarily not transferable fixtures, as were objects of direct charge to the hull of the ship under title A, including expenditures for additions, improvements, and alterations in the original construction and arrangements; also repairs made at navy yards to articles on board ships in commission and originally chargeable to title B.....	\$1,796,317.61	\$928,172.94	\$882,443.89	\$3,606,934.44
Titles E and F (industrial) include charges to stations on account of fixed and movable property such as dry and other docks, wharves, hull machine shops, etc., also movable property such as derricks, sheers, screws, cranes, and tugs not borne upon the Naval Register, tenders, lighters, boats, etc., not belonging to a receiving or other ship, but pertaining to the station proper, etc., and required for industrial purposes, cost of machinery plant for producing or transmitting power and appurtenances, machinery, and machine tools for manufacturing purposes....	67,562.34	142,575.63	31,604.81	241,742.78
Title G (industrial), general maintenance, includes cost of upkeep of all yard craft and other floating property used for industrial purposes, tools, machinery, appliances, etc., noted under titles E and F; also hand tools used in general shops, etc., pay of classified employees at yards and stations, and office appliances.....	629,227.73	56,444.52	39,347.28	725,019.53

APPENDIX NO. I.

Statement of expenditures under appropriation "Construction and repair, 1913," from July 1, 1912, to June 30, 1913—Continued.

	Labor.	Material.	Indirect.	Total.
Title N, expenditures for completed models of ships and experimental work in general.....	\$62, 124. 87	\$66, 961. 82	\$33, 548. 87	\$162, 635. 56
Title R, real estate and chattels (military), includes cost of new tugs, lighters, and barges and other official craft used for military purposes.....	23, 301. 04	44, 709. 84	11, 532. 63	79, 543. 51
Title S (maintenance of yards and stations), military, includes pay of classified employees in the inspection offices outside of the yards and incidental office expenses in connection with their work; also cost of making estimates and plans for the benefit generally of the naval service.....	261, 852. 54	63, 498. 19	28, 219. 28	353, 570. 01
Title T includes the cost of maintenance of tugs, lighters, and barges, and other official craft used for military purposes; also care and preservation of ships in ordinary.....	92, 036. 69	20, 259. 44	19, 184. 39	131, 480. 52
Titles V and W, payments on account of leave and holidays; also disability in accordance with statute law, no work being given in return therefor; and also incidental expenses and losses.....	629, 238. 87	8, 881. 48	4, 372. 71	642, 493. 06
Issues from naval supply account stores to vessels in commission at navy yards and stations and also issues on board ships having general storekeeping system afloat, and losses.....		1, 505, 547. 73		1, 505, 547. 73
Credit for overabsorbed indirect expenses.....			¹ 14, 782. 88	¹ 14, 782. 88
Total.....	3, 561, 661. 69	2, 837, 051. 59	1, 035, 470. 98	7, 434, 184. 26
Services for labor and material rendered by outside parties entirely, such as supplying and installing proprietary articles, or other material of special manufacture, when such method of supplying and installation is advantageous to the Government, and other miscellaneous services.....				52, 412. 91
Miscellaneous obligations and public bills for labor and material and other expenditures on vessels in commission authorized by the commanding officer on account of work under the cognizance of the Bureau of Construction and Repair.....				18, 102. 10
Obligations on outstanding contracts and requisitions.....				819, 361. 12
Total expenditures and obligations.....				8, 324, 060. 39
Amount of appropriation "Construction and repair, 1913".....			\$8, 479, 144. 00	
Add credits on account of transfers to other appropriations.....			62, 164. 82	
			8, 541, 308. 82	
Less debits on account of transfers from other appropriations.....			11, 503. 45	
				8, 529, 805. 37
Balance, June 30, 1913.....				205, 744. 98
Total amount of credits for 1913 on account of surveyed material turned into store from vessels.....				179, 273. 35

¹ Credits.

In accordance with the naval supply account law, these credits could not be used; and, further, they covered articles which, when drawn from store for issue to vessels placed in commission, the value of same were or will be charged to appropriation "Construction and repair".

APPENDIX No. II.

Statement of expenditures at United States navy yards and stations from appropriation "Construction and repair, 1913," for fiscal year ended June 30, 1913.

Station.	Labor.	Material.	Indirect.	Total.
Portsmouth, N. H.	\$216,793.16	\$64,865.65	\$63,359.26	\$345,018.07
Boston, Mass.	491,084.16	172,885.34	190,444.24	854,413.74
Torpedo Station, Newport.	4,614.18	5,744.67		10,358.85
Training Station, Newport.	4,528.45			4,528.45
New York, N. Y.	596,811.22	287,877.30	125,281.94	1,009,970.46
Philadelphia, Pa.	542,939.38	178,267.60	138,675.61	859,872.59
Annapolis.	318.38	12,634.08		12,952.46
Washington.	144,471.95	41,867.82	18,660.42	204,500.19
Norfolk.	583,525.85	226,386.45	227,879.20	1,037,791.50
Charleston, S. C.	98,771.03	34,338.95	28,660.64	161,770.62
Fort Royal, S. C.		1,729.42		1,729.42
Key West, Fla.	7,140.94	1,711.24		8,852.18
Pensacola, Fla.	88.30			88.30
New Orleans, La.	14,441.65	241.91		14,683.56
Training Station, Great Lakes.	300.00	1,422.34		1,722.34
Training Station, Cal.		11.89		11.89
Mare Island, Cal.	356,443.00	116,547.67	96,078.18	569,068.85
Puget Sound, Wash.	325,376.77	102,617.45	101,018.84	529,013.06
Guantanamo, Cuba.	23,230.08	9,486.70		32,716.78
Cavite, P. I.	23,125.85	9,468.79	3,418.21	36,012.85
Olongapo, P. I.	120,320.33	50,678.88	41,994.44	212,993.65
Hawaii.	3,083.14	3,530.41		6,613.55
Guam.	3,977.81	9,650.51		13,628.32
Tutunila.	276.06	49.79		325.85
Total.	3,561,661.69	1,331,503.86	1,035,470.98	5,928,636.53
Issues from naval supply account stores to vessels in commission at navy yards and stations, and also issues on board ships having general storekeeping system afloat and losses by survey.				1,505,547.73
Services for labor and material rendered by outside parties entirely, such as supplying and installing proprietary articles or other material of special manufacture when such method of supplying and installation is advantageous to the Government, and other miscellaneous services.				52,412.91
Miscellaneous obligations and public bills for labor and material and other expenditures on vessels in commission authorized by the commanding officers on account of work under cognizance of the Bureau of Construction and Repair.				18,102.10
Obligations on outstanding contracts and requisitions.				819,361.12
Total expenditures and obligations.				8,324,060.39
Amount of appropriation "Construction and Repair, 1913".			\$8,479,144.00	
Add credits on account transfers to other appropriations.			62,164.82	
			8,541,308.82	
Less debits on account of transfers from other appropriations.			11,503.45	
				8,529,805.37
Balance June 30, 1913.				205,744.98

The amount of obligations on outstanding contracts and requisitions, viz, \$819,361.12, includes the following:

19 coal barges, contract cost.	\$372,760.00
2 oil barges, contract cost, hulls.	109,310.00
3 steel tugboats, contract cost, hulls.	218,000.00
Total.	700,070.00

APPENDIX No. III.

Statement showing relative expenditures by titles and subheads under appropriation "Construction and repair" for fiscal years 1912 and 1913.

	1912	1913
Amounts appropriated for each year.	\$8,479,144.00	\$8,479,144.00
Add net credits for transfers to other appropriations.	44,518.21	50,661.37
Amounts expended.	8,523,662.21	8,529,805.37
	8,473,814.63	8,324,060.39
Balances.	49,847.58	205,744.98

APPENDIX No. III.

Statement showing relative expenditures by titles and subheads under appropriation "Construction and repair" for fiscal years 1912 and 1913—Continued.

Titles and subheads.	1912			
	Labor.	Indirect.	Material.	Total.
D. Changes and repairs to vessels.....	\$2,292,141	\$90,324	\$1,006,247	\$4,199,712
E. Real estate and chattels (industrial).....	39,244	16,520	74,252	130,016
F. Machinery plant.....	15,049	5,786	38,671	59,506
G. Industrial maintenance of yards and stations.....	657,922	47,693	61,520	767,135
N. Tests and experiments.....	47,007	18,971	37,993	103,971
P. Repairs to equipage.....	48,001	23,332	15,150	86,483
R. Real estate and chattels (military).....	16,566	10,877	56,674	84,117
S. Maintenance of yards and stations (military).....	242,080	13,415	45,236	300,731
T. Maintenance of tugs and lighters, care of vessels in ordinary.....	156,138	28,265	41,565	225,968
V. and W. Leave, holiday, disability, and miscellaneous. Issues to ships.....	688,497	8,245	12,627	694,115
			1,506,264	1,506,264
Miscellaneous (including amounts outstanding on requisitions and contracts).....	4,202,645	1,074,428	2,880,945	8,158,018
Credit for over absorbed indirect expense.....				315,796
Total.....	4,202,645 5,277,073	1,074,428	2,880,945	8,473,814

Titles and subheads.	1913			
	Labor.	Indirect.	Material.	Total.
D. Changes and repairs to vessels.....	\$1,720,586	\$843,579	\$901,861	\$3,466,026
E. Real estate and chattels (industrial).....	47,864	22,748	80,529	151,141
F. Machinery plant.....	19,698	8,857	62,046	90,601
G. Industrial maintenance of yards and stations.....	629,228	39,347	56,445	725,020
N. Tests and experiments.....	62,125	33,549	66,962	162,636
P. Repairs to equipage.....	75,731	38,864	26,312	140,907
R. Real estate and chattels (military).....	23,301	11,533	44,710	79,544
S. Maintenance of yards and stations (military).....	261,852	28,219	63,498	353,569
T. Maintenance of tugs and lighters, care of vessels in ordinary.....	92,037	19,184	20,260	131,481
V. and W. Leave, holiday, disability, and miscellaneous. Issues to ships.....	629,239	4,373	8,881	642,493
			1,505,548	1,505,548
Miscellaneous (including amounts outstanding on requisitions and contracts).....	3,561,661	1,050,253	2,837,052	7,448,966
Credit for overabsorbed indirect expense.....		14,782		889,876
Total.....	3,561,661 4,597,132	1,035,471	2,837,052	8,324,060

¹ Credits.

APPENDIX IV.

Statement showing expenditures from appropriation "Construction and repair, 1914," from July 1, 1913, to Nov. 30, 1913.

Month.	Expended for labor.	Expended for material.	Total.
July, 1913.....	\$378,344.35	\$90,975.61	\$469,319.96
August, 1913.....	398,630.07	116,279.17	514,909.24
September, 1913.....	383,259.36	118,909.90	502,169.26
October, 1913.....	348,691.54	129,743.66	478,435.20
November, 1913.....	397,033.00	153,028.00	550,061.00
	1,905,958.32	608,936.34	2,514,894.66
Naval supply account issues to ships for July to November, 1913.....			488,063.16
Miscellaneous obligations as per requisitions, contracts, and public bills for July to November, 1913.....			49,698.66
Expended to Dec. 1, 1913.....			3,062,646.47
Amount of appropriation "Construction and repair, 1914".....		\$8,250,000.00	
Transfers to other appropriations.....		5,589.80	
Expended to Dec. 1, 1913, as above.....			8,255,589.80
Estimated available balance Dec. 1, 1913.....			3,062,646.47
Approximate average monthly expenditure for 5 months ending Nov. 30, 1913.....			5,202,943.33
Average monthly expenditure possible for 7 months, from Dec. 1, 1913, to June 30, 1914.....			610,529.00
			743,277.00

APPENDIX No. V.

Statement showing expenditures, by titles and subheads under construction and repair allotment of appropriation "Equipment of vessels, 1913," for fiscal year 1913.

Titles.	Labor.	Indirect.	Material.	Total.
D. Changes and repairs to vessels.....	\$26,972.54	\$12,536.13	\$37,531.50	\$77,040.17
E. Real estate and chattels (industrial).....	800.44	344.61	89.08	1,234.13
F. Machinery plant.....	90.59	40.41	3,920.68	4,051.68
G. Industrial maintenance of yards and stations.....	2,134.24	28.26	320.43	2,469.93
N. Tests and experiments.....	1,279.92	867.21	1,448.67	3,595.80
P. Repairs to equipment.....	7,378.87	4,224.33	4,495.20	16,098.40
R. Real estate and chattels (military).....	151.74	64.15	2,730.41	2,946.30
S. Maintenance of yards and stations (military).....	2,393.11	291.39	16,248.85	18,933.35
T. Maintenance of tugs and lighters, care of vessels in ordinary.....	881.07	317.27	17,434.05	18,632.39
V and W. Leave, holiday, disability, and miscellaneous.....	12,192.95	51.84	1,661.33	13,906.12
Credit for overabsorbed indirect expenses.....		1 483.09		1 483.09
Total.....	54,275.47	18,282.51	85,867.20	158,425.18
Issues from naval supply account stores to vessels in commission at navy yards and stations and losses by survey.....				1,062,992.34
Issues from naval supply account stores on board vessels afloat.....				188,891.66
Expended for material and services, per requisitions and contracts.....				34,660.86
Expended for services and supplies afloat, per public bills.....				2,346.57
Total expenditures under construction and repair allotment of "Equipment of vessels, 1913".....				1,447,316.61
Amount allotted construction and repair from appropriation "Equipment of vessels, 1913".....			\$1,359,206.40	
Credits on account of transfers to other appropriations.....			80,318.78	
Total.....			1,439,525.18	
Debits on account transfers from other appropriations.....			2,948.97	
				1,436,576.21
Deficit under construction and repair allotment of "Equipment of vessels, 1913".....				10,740.40
Total amount of credits for 1913 on account of surveyed material turned into store from vessels.....				74,971.10

¹ Credits.

In accordance with the naval supply account law these credits could not be used, and, further, they covered articles which when drawn from store for issue to vessels placed in commission, the value of same were or will be charged to bureau allotment.

APPENDIX No. VI.

Statement showing expenditures from construction and repair allotment of appropriation "Equipment of vessels, 1914," from July 1, 1913, to Nov. 30, 1913.

Month.	Expended for labor.	Expended for material.	Total.
July, 1913.....	\$4,606.29	\$4,276.32	\$8,882.61
August, 1913.....	7,102.34	7,365.22	14,467.56
September, 1913.....	7,033.33	12,161.10	19,194.43
October, 1913.....	8,817.95	8,373.60	17,191.55
November, 1913.....	16,712.00	12,615.00	29,327.00
	44,271.91	44,731.24	89,003.15
Naval supply account issues to ships for July to November, 1913.....			346,362.20
Miscellaneous obligations as per requisitions, contracts, and public bills for July to November, 1913.....			1,657.17
Expended to Dec. 1, 1913.....			437,022.62
Amount of construction and repair allotment from appropriation "Equipment of vessels, 1914".....	\$1,575,000.00		
Credits for transfers to other appropriations.....	863.31		
Expended to Dec. 1, 1913, as above.....			1,575,863.31
			437,022.62
Estimated available balance Dec. 1, 1913.....			1,138,840.69
Approximate average monthly expenditure for 5 months ending Nov. 30, 1913.....			87,404.50
Average monthly expenditure possible for 7 months from Dec. 1, 1913, to June 30, 1914.....			162,691.50

APPENDIX No. VII.

List of dry docks at navy yards, together with the number of vessels docked and actual number of days each dock was occupied during the fiscal year 1913.

Location.	No. of dock.	Vessels docked.	Total vessels docked in location (Col. 1).	Number days docks in use.	Total days docks in use in location (Col. 1).
Portsmouth.....		16	16	172	172
Boston.....	1	32		193	
Do.....	2	22	54	181	374
New York.....	1	31		249	
Do.....	2	18		251	
Do.....	3	26		201	
Do.....	4	14	89	229	930
Philadelphia.....	1	15		216	
Do.....	2	29	44	224	440
Norfolk.....	1	28		315	
Do.....	2	50		276	
Do.....	3	37	115	268	850
Charleston.....		46	46	269	269
New Orleans.....	(1)	14	14	142	142
Mare Island.....	1	29		280	
Do.....	2	65	94	226	506
Puget Sound.....	1	40		296	
Do.....	2	5	45	105	401
Olongapo, P. I.....	(2)	23	23	165	165
Key West, Fla.....	(4)	1	1	12	12
Washington, D. C.....	(4)	5	5	82	82
		546		4,352	

¹ Floating dock.

² Dock placed in commission Mar. 1, 1913

³ Dewey Dock.

⁴ Marine railway.

APPENDIX No. VIII.

BUREAU OF STEAM ENGINEERING,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., September 3, 1913.

SIR: 1. In compliance with the department's instructions the bureaus submit herewith joint estimates (See estimate sheet C) under appropriations "Increase of the Navy, construction and machinery" and "Increase of the Navy, torpedo boats," for the fiscal year 1915 for work on new vessels heretofore authorized by Congress:

"Increase of the Navy, construction and machinery."

Under the Bureau of Construction and Repair, for the fiscal

year—		
1914.....	\$15,583,767	
1915.....	10,464,290	
		<u>\$26,048,057</u>

Under the Bureau of Steam engineering, for the fiscal year—

1914.....	9,004,645	
1915.....	6,612,004	
		<u>15,616,649</u>

Total estimated expenditures..... 41,664,706

Amount available to pay on the above:

Balance July 1, 1913.....	10,458,861	
Appropriated per act of Mar. 4, 1913:		
Old program.....	\$13,550,728	
New program.....	6,267,500	
		<u>19,818,228</u>
		<u>30,277,089</u>

Appropriation required for fiscal year 1915..... 11,387,617

"Increase of the Navy, torpedo boats."

Under the Bureau of Construction and Repair, for fiscal

year—		
1914.....	\$2,888,188	
1915.....	1,782,521	
		<u>\$4,670,709</u>

Under the Bureau of Steam Engineering, for fiscal year—

1914.....	1,894,742	
1915.....	1,500,000	
		<u>3,394,742</u>

Total estimated expenditures..... 8,065,451

Amount available to pay on the above:

Balance, July 1, 1913.....	3,026,559	
Appropriated per naval act of Mar. 4, 1913—		
Old program.....	\$2,058,363	
New program.....	1,294,912	
		<u>3,353,275</u>
		<u>6,379,834</u>

Appropriation required for fiscal year 1915..... 1,685,617

2. Attention is invited to the fact that the above estimates do not include any money for new ships that may be authorized at the next regular session of Congress, as no information has been received relative to the number, type, and character of new vessels of the building program for 1915.

R. M. WATT,
S. S. ROBISON, Acting.

Estimated expenditures on vessels under construction for fiscal years 1914 to 1917, inclusive, in connection with the estimate for amount required for the fiscal year 1915.

APPROPRIATION "INCREASE OF THE NAVY, CONSTRUCTION AND MACHINERY."

Vessels.	Fiscal year 1914.			Fiscal year 1915.		
	Hull.	Machinery.	Total.	Hull.	Machinery.	Total.
Virginia.....	\$11,954.75	(1)				
Nebraska.....	25,000.00	(1)				
West Virginia.....	6,650.70	(1)				
Maryland.....	11,593.23	(1)				
Tennessee.....	10,355.61	(1)				
Charleston.....	6,663.47	(1)				
Washington.....	12,190.00	(1)				
Kansas.....	8,234.00	(1)				
Arkansas.....	62,664.00	(1)				
Drayton.....	1,624.00	(1)				
Henley.....	15,000.00	(1)				
Jarvis.....	21,837.75	(1)				
Mayrant.....	1,106.36	(1)				
Ontario.....	10,679.00	(1)				
Paulding.....	1,624.00	(1)				
Sonoma.....	10,554.00	(1)				
Trippe.....	1,637.47	(1)				
Utah.....	2,500.00	(1)				
Walke.....	1,711.68	(1)				
Wyoming.....	73,599.00	(1)				
New York.....	297,170.00		\$297,170			
Texas.....	1,029,827.00	\$900,000	2,729,827	\$100,000	\$139,484	\$239,484
Nevada.....	574,850.00	374,750	949,600			
Oklahoma.....	1,618,890.00	800,000	2,418,890	1,079,240	379,700	1,458,940
Pennsylvania.....	1,772,616.00	800,000	2,572,616	1,181,744	349,320	1,531,064
Cassin.....	1,936,363.00	600,000	2,536,363	1,936,364	900,000	2,836,364
Cummings.....	60,925.00	47,225	108,150			
Downes.....	60,000.00	56,150	116,150			
Duncan.....	161,375.00	139,625	301,000		50,000	50,000
Aylwin.....	67,885.00	50,610	118,495			
Parker.....	52,170.00	63,440	115,610			
Benham.....	55,390.00	60,220	115,610			
Balch.....	50,975.00	64,635	115,610			
O'Brien.....	50,865.00	64,745	115,610			
Nicholson.....	227,294.00	397,900	625,194	114,706	100,000	214,706
Winslow.....	214,666.00	397,900	612,566	127,334	100,000	227,334
McDougal.....	226,666.00	397,000	623,666	133,334	125,000	258,334
Cushing.....	250,400.00	320,500	570,900	82,600	75,000	157,600
Ericsson.....	210,383.00	373,200	583,583	125,192	100,000	225,192
Fulton.....	226,666.00	400,000	626,666	133,334	153,500	286,834
Melville.....	275,577.00	110,130	385,707	15,000	50,000	65,000
Bushnell.....	380,000.00	240,000	620,000	380,000	300,000	680,000
Proteus.....	297,619.00	180,000	477,619	327,381	180,000	507,381
Nereus.....	70,000.00	39,500	109,500			
Jason.....	109,260.00	99,240	208,500			
Kanawha.....	141,100.00	53,000	194,100			
Maumee.....	329,209.00	349,895	679,104	395,052	50,000	445,052
Sacramento.....	274,035.00	250,000	524,035	328,842	150,000	478,842
Monocacy.....	294,200.00	82,300	376,500	15,000	10,000	25,000
Palos.....	126,252.00	22,478	148,730			
Battleship No. 39.....	171,252.00	20,202	191,454			
Torpedo-boat destroyers 57 to 62.....	1,666,667.00	350,000	2,016,667	1,666,667	1,000,000	2,666,667
Transport.....	862,500.00	800,000	1,662,500	1,035,000	2,000,000	3,035,000
Supply ship.....	368,750.00	50,000	418,750	737,500	200,000	937,500
	275,000.00	50,000	325,000	550,000	200,000	750,000
Total.....	15,583,767.00	9,004,645	24,588,412	10,464,290	6,612,004	17,076,294

* The amounts in column headed "Hull" include amounts required for machinery on ships preliminarily accepted prior to July 1, 1913, but not finally settled.

Estimated expenditures on vessels under construction for fiscal years 1914 to 1917, inclusive, in connection with the estimate for amount required for the fiscal year 1915—Contd.

APPROPRIATION "INCREASE OF THE NAVY, CONSTRUCTION AND MACHINERY"—Continued.

Vessels.	Fiscal years 1916 and 1917.			Total.		
	Hull.	Machinery.	Total.	Hull.	Machinery.	Total.
Virginia.....				\$11,954.75		
Nebraska.....				25,000.00		
West Virginia.....				8,650.70		
Maryland.....				11,593.23		
Tennessee.....				10,356.61		
Charleston.....				6,663.47		
Washington.....				12,190.00		
Kansas.....				8,234.00		
Arkansas.....				62,664.00		
Drayton.....				1,624.00		
Henley.....				15,000.00		
Jarvis.....				21,837.75		
Mayrant.....				1,106.36		
Ontario.....				10,679.00		
Paulding.....				1,624.00		
Sonoma.....				10,554.00		
Trippe.....				1,627.47		
Utah.....				2,500.00		
Walke.....				1,711.68		
Wyoming.....				73,599.00		
New York.....				1,926,827.00	\$1,039,484	\$297,170
Texas.....				574,850.00	374,750	2,966,311
Nevada.....	\$100,000		\$100,000	2,798,100.00	1,179,700	3,977,800
Oklahoma.....	100,000		100,000	3,054,360.00	1,149,320	4,203,680
Pennsylvania.....	1,552,273	\$500,000	2,052,273	5,425,000.00	2,000,000	7,425,000
Cassin.....				60,925.00	47,225	108,150
Cummings.....				60,000.00	56,150	116,150
Downes.....				161,375.00	189,625	351,000
Duncan.....				67,885.00	50,610	118,495
Aylwin.....				52,170.00	63,440	115,610
Parker.....				55,390.00	60,220	115,610
Benham.....				50,975.00	64,635	115,610
Balch.....				50,865.00	64,745	115,610
O'Brien.....				342,000.00	497,900	839,900
Nicholson.....				342,000.00	497,900	839,900
Winslow.....				360,000.00	522,000	882,000
McDougal.....				353,000.00	395,500	728,500
Cushing.....				335,575.00	473,200	808,775
Eriesson.....				360,000.00	553,500	913,500
Fulton.....				290,577.00	160,130	450,707
Melville.....	15,000		15,000	775,000.00	540,000	1,315,000
Bushnell.....	15,000		15,000	640,000.00	360,000	1,000,000
Proteus.....				70,000.00	39,500	109,500
Nereus.....				109,260.00	99,240	208,500
Jason.....				141,100.00	53,000	194,100
Kanawha.....				724,261.00	399,895	1,124,156
Maumee.....	137,018		137,018	739,895.00	400,000	1,139,895
Sacramento.....				309,200.00	92,300	401,500
Monocacy.....				126,252.00	22,478	148,730
Palos.....				171,252.00	20,202	191,454
Battleship No. 39.....	1,666,666	1,075,000	2,741,666	5,000,000.00	2,425,000	7,425,000
Torpedo-boat destroyers Nos. 57 to 62.....	292,500	650,000	942,500	2,190,000.00	3,450,000	5,640,000
Transport.....	393,750	100,000	493,750	1,500,000.00	350,000	1,850,000
Supply ship.....	300,000	50,000	350,000	1,125,000.00	300,000	1,425,000
Total.....	4,572,207	2,375,000	6,947,207	30,620,264.00	17,991,649	48,611,913

Estimated expenditures on vessels under construction for fiscal years 1914 to 1917, inclusive, in connection with the estimate for amount required for the fiscal year 1915—Contd.

APPROPRIATION "INCREASE OF THE NAVY, TORPEDO BOATS."

Vessels.	Fiscal year 1914.			Fiscal year 1915.		
	Hull.	Machinery.	Total.	Hull.	Machinery.	Total.
Submarines:						
E-2.....	\$3,616.76	.....	\$3,616.76	.....	.....	.....
F-4.....	52,547.00	.....	52,547.00	.....	.....	.....
G-1.....	15,000.00	.....	15,000.00	.....	.....	.....
G-2.....	71,163.76	.....	71,163.76	.....	.....	.....
G-3.....	107,640.00	99,360.00	117,000.00	\$15,000.00	.....	\$15,000.00
G-4.....	145,262.00	132,650.00	277,912.00	.....	.....	.....
H-1.....	82,025.00	10,975.00	93,000.00	15,000.00	.....	15,000.00
H-2.....	43,541.00	14,545.67	58,086.67	.....	.....	.....
H-3.....	41,050.00	17,036.67	58,086.67	.....	.....	.....
K-1.....	41,330.00	16,756.67	58,086.67	.....	.....	.....
K-2.....	76,660.00	28,140.60	104,800.60	20,000.00	.....	20,000.00
K-3.....	74,410.00	30,390.60	104,800.60	20,000.00	.....	20,000.00
K-4.....	64,306.00	34,894.30	99,200.30	.....	.....	.....
K-5.....	63,756.00	40,494.30	104,250.30	20,000.00	.....	20,000.00
K-6.....	108,583.00	60,717.02	169,300.02	20,000.00	.....	20,000.00
K-7.....	103,763.00	65,537.02	169,300.02	20,000.00	.....	20,000.00
K-8.....	72,578.00	100,222.36	172,800.36	20,000.00	.....	20,000.00
L-1.....	77,378.00	121,022.36	198,400.36	20,000.00	.....	20,000.00
L-2.....	196,500.00	145,250.00	341,750.00	118,250.00	\$100,000.00	218,250.00
L-3.....	186,158.00	145,250.00	331,408.00	108,562.00	100,000.00	208,562.00
L-4.....	176,850.00	145,250.00	322,100.00	117,900.00	100,000.00	217,900.00
L-5.....	168,429.00	145,250.00	313,679.00	126,321.00	100,000.00	226,321.00
L-6.....	186,285.00	114,000.00	300,285.00	139,715.00	100,000.00	239,715.00
L-7.....	180,867.00	123,500.00	304,367.00	135,643.00	100,000.00	235,643.00
M-1.....	172,636.00	123,500.00	296,136.00	143,864.00	100,000.00	243,864.00
M-2.....	147,273.00	170,000.00	317,273.00	122,727.00	100,000.00	222,727.00
Nos. 48 to 51.....	299,754.00	100,000.00	399,754.00	599,509.00	700,000.00	1,299,509.00
Total.....	2,888,187.76	1,894,742.57	4,782,930.33	1,782,521.00	1,500,000.00	3,282,521.00

Vessels.	Fiscal years 1916 and 1917.			Totals.		
	Hull.	Machinery.	Total.	Hull.	Machinery.	Total.
Submarines:						
E-2.....	.....	.....	.....	\$3,616.76	.....	\$3,616.76
F-4.....	.....	.....	.....	52,547.00	.....	52,547.00
G-1.....	.....	.....	.....	15,000.00	.....	15,000.00
G-2.....	.....	.....	.....	122,640.00	\$9,360.00	132,000.00
G-3.....	.....	.....	.....	145,262.00	132,650.00	277,912.00
G-4.....	.....	.....	.....	97,025.00	10,975.00	108,000.00
H-1.....	.....	.....	.....	43,541.00	14,545.67	58,086.67
H-2.....	.....	.....	.....	41,050.00	17,036.67	58,086.67
H-3.....	.....	.....	.....	41,330.00	16,756.67	58,086.67
K-1.....	.....	.....	.....	96,660.00	28,140.60	124,800.60
K-2.....	.....	.....	.....	94,410.00	30,390.60	124,800.60
K-3.....	.....	.....	.....	64,306.00	34,894.30	99,200.30
K-4.....	.....	.....	.....	63,756.00	40,494.30	104,250.30
K-5.....	.....	.....	.....	108,583.00	60,717.02	169,300.02
K-6.....	.....	.....	.....	103,763.00	65,537.02	169,300.02
K-7.....	.....	.....	.....	72,578.00	100,222.36	172,800.36
K-8.....	.....	.....	.....	77,378.00	121,022.36	198,400.36
L-1.....	.....	.....	.....	314,750.00	245,250.00	560,000.00
L-2.....	\$20,000.00	.....	\$20,000.00	314,750.00	245,250.00	560,000.00
L-3.....	20,000.00	.....	20,000.00	314,750.00	245,250.00	560,000.00
L-4.....	20,000.00	.....	20,000.00	314,750.00	245,250.00	560,000.00
L-5.....	20,000.00	.....	20,000.00	346,000.00	214,000.00	560,000.00
L-6.....	20,000.00	.....	20,000.00	336,500.00	223,500.00	560,000.00
L-7.....	20,000.00	.....	20,000.00	336,500.00	223,500.00	560,000.00
M-1.....	20,000.00	.....	20,000.00	290,000.00	270,000.00	560,000.00
Nos. 48 to 51.....	479,673.00	\$300,000.00	779,673.00	1,378,936.00	1,100,000.00	2,478,936.00
Total.....	619,673.00	300,000.00	919,673.00	5,290,381.76	3,694,742.57	8,985,124.33

APPENDIX IX.

SUMMARY OF VESSELS IN THE UNITED STATES NAVY, DEC. 16, 1913.

Type.	Fit for service, including those under repair.		Under construction.		Authorized.		Total.	
	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.
Battleships, first line.....	9	183,650	6	171,800			15	355,450
Battleships, second line.....	24	318,146					24	318,146
Armored cruisers.....	10	140,080					10	140,080
Cruisers, first class.....	5	46,465					5	46,465
Cruisers, second class.....	4	25,065					4	25,065
Cruisers, third class.....	12	37,498					12	37,498
Monitors.....	9	32,944					9	32,944
Destroyers.....	45	28,831	17	18,186			62	47,017
Torpedo boats.....	22	3,663					22	3,663
Submarines.....	26	7,355	20	10,621	4	(1)	50	17,976
Tenders to torpedo vessels.....	7	20,661	3	12,138			10	32,799
Gunboats.....	27	25,078	3	1,805			30	26,883
Transports.....	5	26,595			1	10,000	6	36,595
Supply ships.....	4	25,400			1	8,500	5	33,900
Hospital ships.....	2	9,000					2	9,000
Fuel ships.....	23	245,106	2	29,000			25	* 274,106
Converted yachts.....	16	9,476					16	9,476
Tugs.....	45	18,024					45	18,024
Special type.....	10	41,998					10	41,998
Unserviceable for war pur- poses.....	21	47,501					21	47,501
Total.....	326	1,292,536	51	243,550	6	* 18,500	383	* 1,654,586

* Displacement not yet known.

* Excepting the Justin.

* Excepting the 4 new submarines.

* Excepting the Justin and 4 new submarines.

SUMMARY OF VESSELS IN THE UNITED STATES NAVY, JULY 1, 1913.

Type.	Fit for service, including those under repair.		Under construction.		Authorized.		Total.	
	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.	Num- ber.	Displace- ment.
Battleships, first line.....	9	183,650	5	140,409	1	31,400	15	355,450
Battleships, second line.....	24	318,146					24	318,146
Armored cruisers.....	10	140,080					10	140,080
Cruisers, first class.....	5	46,465					5	46,465
Cruisers, second class.....	4	25,065					4	25,065
Cruisers, third class.....	12	37,498					12	37,498
Monitors.....	9	32,944					9	32,944
Destroyers.....	42	25,777	14	14,580	6	6,540	62	46,897
Torpedo boats.....	26	4,514					26	4,514
Submarines.....	24	6,421	22	11,555	4	(1)	50	17,976
Tenders to torpedo vessels.....	7	20,661	2	8,558	1	3,580	10	32,799
Gunboats.....	27	25,078	3	1,805			30	26,883
Transports.....	5	26,595			1	10,000	6	36,595
Supply ships.....	4	25,400			1	8,500	5	33,900
Hospital ships.....	2	9,000					2	9,000
Fuel ships.....	22	213,287	4	67,000			26	* 280,287
Converted yachts.....	17	9,634					17	9,634
Tugs.....	45	18,024					45	18,024
Special type.....	10	41,998					10	41,998
Unserviceable for war pur- poses.....	22	50,771					22	50,771
Total.....	326	1,261,008	50	243,898	14	* 50,020	390	* 1,564,926

* Displacement not yet determined.

* Excepting Justin.

* Excepting displacement of 4 new submarines

* Excepting displacement of 4 new submarines and Justin.

Summary of Vessels Fit for Service, Including Those Under Repair, JUL
1, 1906, TO DEC. 16, 1913.

Year.	Total displacement.	Increase during fiscal year.
	Tons.	Tons.
1906.....	1 687,942	142,8
1907.....	1 830,815	88,0
1908.....	1 918,833	18,2
1909.....	1 987,108	130,
1910.....	1 1,067,537	15,
1911.....	1 1,082,956	81,
1912.....	1 1,164,926	96,
1913.....	1 1,261,008	
Dec. 16, 1913.....	1 1,292,536	

VESSELS UNDER CONSTRUCTION.

1906.....	255,290	
1907.....	169,074	
1908.....	122,533	
1909.....	215,145	
1910.....	149,639	
1911.....	202,795	
1912.....	279,086	
1913.....	243,898	
Dec. 16, 1913.....	243,550	

¹ Excepting the Justin.

² Excepting the Locust.

APPENDIX X.

Vessels under construction, United States Navy.

[Navy Department, Bureau of Construction and Repair, Jan. 8, 1914.]

Name, type, and number of vessel.	Contractor.	Percentage of completion.			
		Jan. 1, 1914.		Dec. 1, 1913.	
		Total.	Per cent on ship.	Total.	Per cent on ship.
BATTLESHIPS.					
34. New York.....	New York Navy Yard.....	96.2	94.6	94.0	9
35. Texas.....	Newport News Ship Building & Dry Dock Co.	98.1	98.0	97.2	1
36. Nevada.....	Fore River Ship Building Co.....	52.6	35.5	50.8	
37. Oklahoma.....	New York Ship Building Co.....	56.3	51.7	51.6	
38. Pennsylvania....	Newport News Ship Building & Dry Dock Co.	14.4	8.6	14.1	
39.	New York Navy Yard.....	3.2		1.4	
DESTROYERS.					
	New York Ship Building Co.....	91.5	91.5	87.2	
	..... & Sons.....	97.4	97.4	97.4	
		96.2	96.2	96.2	

APPENDIX X.

Vessels under construction, United States Navy—Continued.

Name, type, and number of vessel.		Contractor.	Percentage of completion.			
			Jan. 1, 1914.		Dec. 1, 1913.	
			Total.	Per cent on ship.	Total.	Per cent on ship.
DESTROYER TENDER.						
2.	Melville.....	New York Ship Building Co.....	23.0	17.8	15.3	6.0
SUBMARINES.						
26.	G-4.....	American Laurenti Co. (Philadelphia).....	96.4	95.5	96.4	95.5
27.	G-2 ¹	Lake Torpedo Boat Co. (Bridgeport).....	89.7	89.7	89.7	89.7
28.	H-1.....	Electric Boat Co. (San Francisco).....	(1)	(1)	100.0	100.0
29.	H-2.....	do.....	(1)	(1)	100.0	100.0
30.	H-3.....	Electric Boat Co. (Seattle).....	99.9	98.8	98.9	98.0
31.	G-3 ¹	Lake Torpedo Boat Co. (Bridgeport).....	80.3	80.0	77.3	77.0
32.	K-1.....	Electric Boat Co. (Quincy).....	99.2	99.2	94.1	94.1
33.	K-2.....	do.....	99.2	99.2	94.1	94.1
34.	K-3.....	Electric Boat Co. (San Francisco).....	90.2	89.5	89.5	88.8
35.	K-4.....	Electric Boat Co. (Seattle).....	88.7	87.2	88.4	86.0
36.	K-5.....	Electric Boat Co. (Quincy).....	87.5	86.7	83.9	82.3
37.	K-6.....	do.....	85.7	84.4	83.4	81.8
38.	K-7.....	Electric Boat Co. (San Francisco).....	82.1	80.6	80.9	79.2
39.	K-8.....	do.....	80.9	79.4	78.5	76.8
40.	L-1.....	Electric Boat Co. (Quincy).....	18.5	14.6	16.2	12.0
41.	L-2.....	do.....	18.4	14.5	16.2	12.0
42.	L-3.....	do.....	18.4	14.5	16.2	12.0
43.	L-4.....	do.....	18.3	14.4	16.2	12.0
44.	L-5.....	Lake Torpedo Boat Co. (Bridgeport).....	7.4	4.2	7.4	4.2
45.	L-6.....	Lake Torpedo Boat Co. (Long Beach, Cal.).....				
46.	L-7.....	do.....				
47.	M-1.....	Electric Boat Co. (Quincy).....	12.4	8.7	11.1	7.5
SUBMARINE TENDERS.						
1.	Fulton.....	New London Steam & Electric Boat Co. (Quincy).....	34.9	27.6	27.8	19.1
2.	Bushnell.....	Seattle Construction & Dry Dock Co.....	12.2		4.5	
FUEL SHIPS.						
13.	Kanawha.....	Mare Island Navy Yard.....	23.7	20.1	14.7	9.1
14.	Maumee.....	do.....	15.2	8.6	9.2	
GUNBOAT.						
19.	Sacramento.....	Wm. Cramp & Sons.....	66.1	62.7	57.3	55.1

¹ Completed. Delivered at Mare Island Navy Yard, Nov. 29, 1913.



[No. 7.]

**COMMITTEE ON NAVAL AFFAIRS,
Tuesday, January 13, 1914.**

The committee met at 10.30 o'clock a. m., Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL ROBERT S. GRIFFIN, CHIEF
BUREAU OF STEAM ENGINEERING.**

The CHAIRMAN. Gentlemen, we have with us this morning Admiral Griffin, Chief of the Bureau of Steam Engineering.

The first item is "Steam machinery," on page 80. I notice, Admiral, there is a slight reduction in the amount asked. I believe there was also a reduction in the appropriation of last year.

Admiral GRIFFIN. A reduction of \$250,000 last year and a further reduction of \$86,000 this year, which includes the reduction of \$6,000 for the experiment station.

The CHAIRMAN. In this one item you have a reduction of \$35,000, I believe, and you change the word "aeroplane" to "aircraft." I presume that is to make it in keeping with the change suggested by the other bureaus.

Admiral GRIFFIN. Yes, sir; and in keeping with the progress being made in flying craft.

The CHAIRMAN. Did you have any unexpended balance, Admiral, in this appropriation?

Admiral GRIFFIN. A small amount?

The CHAIRMAN. How much?

Admiral GRIFFIN. \$26,359.44 in the total for steam machinery.

The CHAIRMAN. The next item is for the purchase, handling, and preservation of all material and stores, etc. You have a reduction there of \$51,000.

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Did you have any unexpended balance in that item?

Admiral GRIFFIN. That is included in the total appropriation, "Steam machinery."

The CHAIRMAN. Was there a reduction last year in that item, do you recall?

Admiral GRIFFIN. I do not recall, but in the total appropriation for steam machinery there was a reduction of \$250,000.

The CHAIRMAN. The appropriation for incidental expenses of the Navy remains the same as last year—\$6,000?

Admiral GRIFFIN. Yes, sir.

Mr. BUCHANAN. Do I understand that this \$250,000 is unexpended?

Admiral GRIFFIN. In the fiscal year 1913 there was an unexpended balance of about \$250,000, which was reappropriated for use in the

development of an oil engine, but the appropriation for the fiscal year 1914 was made \$250,000 less than for 1913. In other words, the quarter of a million dollars which was saved in 1913 was permitted to be used in the development of an oil engine, and the appropriation for the upkeep of the machinery of the Navy was made a quarter of a million dollars less than it had been theretofore.

The CHAIRMAN. And in this bill it is a quarter of a million dollars less than it was before plus the \$86,000?

Admiral GRIFFIN. Yes; \$336,000 less.

The CHAIRMAN. Referring to page 82, the part that is eliminated, there was an appropriation authorized last year of \$250,000 for the development of an oil engine using heavy oil; that is, an internal-combustion engine, as I understand it.

Admiral GRIFFIN. Yes, sir; a heavy-oil engine.

The CHAIRMAN. What is the status of that, Admiral? What progress and development has been made?

Admiral GRIFFIN. We have decided on the type of engine we will use and have purchased the plans, which are being supplied somewhat slower than we would wish, and we have begun the construction of the engines at the New York Navy Yard.

Mr. WITHERSPOON. Mr. Chairman, I do not quite understand that. Will you please state your question again?

The CHAIRMAN. You will notice, on page 82, that last year there was a reappropriation of \$250,000 to be used for the construction and development of an internal-combustion engine. I was asking Admiral Griffin to tell us what progress had been made with that experiment and with the construction of that engine.

Admiral GRIFFIN. After an investigation of all the principal types of heavy-oil engines that were on the market, all of which are of foreign design, we decided on what is known as the Nuremburg type.

Mr. ROBERTS. Is that what is also called the Diesel type?

Admiral GRIFFIN. They are all of the Diesel type.

Mr. ROBERTS. The Nuremburg is a variation of the Diesel type?

Admiral GRIFFIN. It is one of the different varieties that are made. There are several people who have gotten out Diesel engines, and each has some special patent of his own.

Mr. ROBERTS. If it does not interfere with the continuity of your statement in this respect, I wish you would explain what the Diesel engine is. What is the particular thing that makes the Diesel engine so valuable?

Admiral GRIFFIN. The Diesel engine is one that uses oil in the cylinder instead of steam, and it is an engine which operates, of course, without a boiler. The oil itself is sprayed into the cylinder with a jet of air and is fired by the heat of compression of the air in the cylinder.

Mr. ROBERTS. The Nuremburg is an engine that uses oil in the cylinder, but has some other features about getting the oil into the cylinder or something of that sort?

Admiral GRIFFIN. Some little patent connected with the method of introduction of oil, etc.

Mr. ROBERTS. But any engine that uses oil in the cylinder you call a Diesel type?

Admiral GRIFFIN. Any engine that uses oil fired by the heat of compression of air in the cylinder is known in technical parlance as a Diesel engine.

The CHAIRMAN. And you get your power direct by the heat and explosion of the oil in combination with air inside of the cylinder, instead of using the oil in combustion to heat water and produce steam and get the heat and explosion by steam?

Admiral GRIFFIN. That expresses it.

The CHAIRMAN. Now, then, I will ask you to continue your statement.

Admiral GRIFFIN. We decided on the Nuremburg type of engine because it is one that is built in this country for submarines, because it is a representative type of Diesel engine, and because we could purchase the plans for a figure which would not be absolutely prohibitive if we ever expected to build an engine. Some of the Diesel engine people wanted almost the entire appropriation for the plans that they would supply. So, having had some experience with the Nuremburg type of engine, and recognizing the advantage that would follow from having a firm in this country familiar with its construction and design, we decided that for this engine it would be more advantageous for us to adopt that engine than any of the other types of engine. I presume you would like to know what we paid for these plans.

The CHAIRMAN. Yes.

Admiral GRIFFIN. We paid, for the plans, \$32,098.

Mr. ROBERTS. Is that payment in the nature of a license or royalty?

Admiral GRIFFIN. It covers the cost of the plans and the license to manufacture. It includes all the expense that we would be put to except the actual expense of construction, and it also covers the privilege of sending over to the works of these people in Germany an officer who has had some experience in Diesel engines in submarines, a leading draftsman from the New York Navy Yard, and one of the leading mechanics. They were given the run of the drafting rooms and the shops, with certain restrictions in regard to Government engines that were being built there at the time; and during the time that they were there they supervised some of the work of making the plans, studied the methods followed in the shop, and generally collected all the information they could in regard to the construction of these engines. As I said before, the plans are developed abroad and forwarded here.

Mr. BUCHANAN. Could not the department engineers prepare those plans?

Admiral GRIFFIN. Not for Diesel engines. We did not feel that we had had sufficient experience for that. The only experience we had had in Diesel engine work was in the submarine small engines, and it was considered that for this first engine we had better profit by the experience of one of the best firms we could find.

Mr. BUCHANAN. The department generally does prepare its own plans, does it not?

Admiral GRIFFIN. For all reciprocating engines we do. For the turbines we have not been doing that, because they are all covered by patents.

Mr. ROBERTS. Are these Nuremburg and Diesel engines covered by patents?

Admiral GRIFFIN. Oh, yes; all of them are, and to try to develop one of our own independently we would probably be repeating the costly experience of all these people in constructing the engines and be running into a cost that would be prohibitive.

Mr. BUCHANAN. What yards are equipped to perform such construction work as this?

Admiral GRIFFIN. The New York yard is going to do this work, but I think almost any of the other yards could do it. Boston could, so could Philadelphia, Norfolk, Mare Island, and I think almost any of the other yards. It is not a very large engine; each one is of 2,500 horsepower.

Mr. ROBERTS. You refer to the one you are now at work on?

Admiral GRIFFIN. Yes.

The CHAIRMAN. How many do you have in combination?

Admiral GRIFFIN. There are two engines, each with six cylinders.

The CHAIRMAN. That gives you 5,000 horsepower for the two engines?

Admiral GRIFFIN. Yes.

The CHAIRMAN. Admiral, I would like to ask you a question in view of the statement you made a while ago explaining why you selected the Nuremburg engine. Leaving out the question of cost of plans, etc., and judging alone the merits of the different types of engines, do you consider the Nuremburg engine equal in efficiency and advanced development to all the other types of engines, or is there some other type of engine that is better and more fully developed and advanced than the Nuremburg which you did not buy because of the expense?

Admiral GRIFFIN. There are certain features in the Nuremburg that we thought were superior to those in others. Admiral Cone was chief of the bureau at the time, and while I can not speak for him, but having been in the bureau, I think I know pretty well what influenced us to adopt the Nuremburg. There was another engine that I think we would have adopted if the price had been as low as the Nuremburg, not so much because they had shown anything superior in the engines they had built, but there are one or two features that indicated that it might prove a better engine. However, we did not think that these points were sufficient to justify us in spending about \$100,000 more for the right to manufacture.

Mr. BUCHANAN. What will be the saving in fuel in these engines as compared with the others?

Admiral GRIFFIN. It will easily cut the cost in two.

Mr. ROBERTS. You mean as compared with an engine of equal horsepower?

Admiral GRIFFIN. Yes, sir.

Mr. BUCHANAN. And will it be just as reliable?

Admiral GRIFFIN. That is a point that has to be determined. So far the engines that have been built have been fairly reliable. Of course we do not get the fullest information in regard to them. The builders all tell us that there are no troubles whatever, but we know that there are troubles, but the magnitude of them we do not know.

(Since this hearing a vessel fitted with oil engines reached New York with an engine disabled, having run about 3,000 miles under the other engine.)

The CHAIRMAN. The Diesel engine as a whole is still in an experimental stage?

Admiral GRIFFIN. In large units. There have been a number of very successful ones built for merchant ships, but these are very low-powered engines.

Mr. ROBERTS. Admiral, will this engine cost \$250,000?

Admiral GRIFFIN. I think it will cost all of that.

Mr. ROBERTS. Then that will give you one-half of the power for the fuel ship, and in order to get the other 2,500 horsepower you will have to spend more.

Admiral GRIFFIN. No, sir; I mean for both the engines. These are two, 2,500-horsepower engines that we hope to build. We will use up all the money. There is no question of that.

Mr. ROBERTS. Then you are really building two engines?

Admiral GRIFFIN. Yes, sir; it is a twin-screw ship.

Mr. WITHERSPOON. Is it proposed to put this engine in the new ship we are building?

Admiral GRIFFIN. In the fuel ship we are building at Mare Island, an oil-fuel ship.

Mr. ROBERTS. If you wish to build more of this type of engine what additional expense will there be for the royalty?

Admiral GRIFFIN. I do not remember whether that was covered in the contract or not.

Mr. ROBERTS. There will be nothing additional for plans?

Admiral GRIFFIN. No; we could develop our own plans, but we would have to pay a royalty. In the case of turbine ships that royalty has been 50 cents per horsepower. In other words, in building the battleship at New York, I think the power was 34,000 horsepower, and we are paying a royalty of \$17,000.

Mr. BUCHANAN. What is the cost of these engines compared with the engines now in use?

Admiral GRIFFIN. They are more expensive to build.

Mr. BUCHANAN. How much more?

Admiral GRIFFIN. Much more. Of course we can not tell from the first engine what the cost is going to be, but I should say they would easily run 40 or 50 per cent more.

Mr. ROBERTS. How do they compare with the present type of reciprocating engine in the matter of space and weight?

Admiral GRIFFIN. They occupy much more space and more weight than the present engines. The accessories are heavier and there are more of them, but, of course, you save in boilers; not having the boilers, you do save a certain amount of space and some weight also.

Mr. ROBERTS. Do you save any bunker space by the oil type of engine?

Admiral GRIFFIN. Oh, yes. You can get along with less fuel. We can have either a smaller bunker space, or with the same bunker space make longer voyages.

The CHAIRMAN. A year or two ago it was stated that one of the ships of the German Government had these Diesel engines of perhaps 15,000 horsepower—

Admiral GRIFFIN (interposing). Twelve thousand horsepower.

The CHAIRMAN. What has been learned of the working of the engines in that ship since that time?

Admiral GRIFFIN. They have not been installed yet. The German Government has been experimenting with one cylinder for that engine, and it is also a Nuremburg engine.

Mr. BUCHANAN. Does the German Government construct its own engines or contract for them?

Admiral GRIFFIN. This one is contracted to be built by the Nuremburg people, and the information we get about that engine is that this one experimental cylinder has been perfectly satisfactory, but, of course, we have nothing very definite on the subject.

The CHAIRMAN. Then the German Government, as well as our own Government, is trying in a somewhat experimental way to develop and ascertain what are the capabilities of the Diesel engine?

Admiral GRIFFIN. Yes. The only difference is they have gone to larger engines and engines of higher power than we have.

The CHAIRMAN. Admiral Cone stated in his hearing last year that the engine was constructed and ran for a considerable time in the shop, and exploded after it had been running for some considerable time, killing several men. "I know also that after this accident this company has gone right to work on the further development of this engine." Now, the one you are speaking of is the second engine built after this accident?

Admiral GRIFFIN. The rebuilt engine. Dr. Diesel himself was over here after that accident happened, and he told us that it was due entirely to an error made in the design.

The CHAIRMAN. Do you know whether or not they have had any further explosions?

Admiral GRIFFIN. They have not, to the best of my belief.

The CHAIRMAN. Now, you spoke of a back fire awhile ago. That is an explosion on a limited scale, is it not?

Admiral GRIFFIN. Yes; but it is a minor explosion.

The CHAIRMAN. You spoke awhile ago of back fires in the engines on the submarines breaking your shaft.

Admiral GRIFFIN. It probably resulted from that. We do not know definitely.

The CHAIRMAN. But you have broken shafts and you have back fires. Do you anticipate that in the larger engines you will have a corresponding increase in the force of the back fires that may break the shafts?

Admiral GRIFFIN. I do not think we need anticipate that in this engine we are building at New York. The submarine engines, of course, are built much lighter, relatively, than the engines we are putting in this fuel ship.

Mr. BUCHANAN. Have you any information as to the cost of these engines to the German Government?

Admiral GRIFFIN. No, sir; I have not.

Mr. BUCHANAN. You do not know what will be their cost compared with the estimated cost here?

Admiral GRIFFIN. No, sir; I do not know that at all.

Mr. FARR. Did Mr. Diesel specify the defect that caused that explosion?

Admiral GRIFFIN. Yes; he did. He explained just what it was, and his explanation seemed very reasonable.

Mr. ROBERTS. Dr. Diesel himself is now dead?

Admiral GRIFFIN. Yes.

The CHAIRMAN. This engine we are building now and the cost you speak of is more than it would be after the development of it when you get down to building that type of engine?

Admiral GRIFFIN. Oh, yes. There are a great many subsidiary costs that enter into the building of the first engine of this type.

The CHAIRMAN. There is also a certain amount of duplication of work and a good deal of changing done.

Admiral GRIFFIN. Yes; there are a great many little things that we will want to change; and the foundation for testing these engines is a very expensive structure, the cost of which will have to come out of this appropriation.

Mr. WITHERSPOON. How much did you say you had to pay on account of the patents?

Admiral GRIFFIN. On account of the plans and the patents and the right to manufacture, \$32,098.

Mr. WITHERSPOON. I do not want to know about the plans, but just the patents.

Admiral GRIFFIN. It was all involved in one lump sum.

Mr. WITHERSPOON. Did the patents forbid you drawing the plans yourself?

Admiral GRIFFIN. We could not duplicate them without infringing their patent. You might say it is all embodied in this cost of \$32,098. The use of the patents would be separate because they drew the plans for us. They were first drawn in Germany and redrawn or retraced in this country, and the metric measurements converted into English measurements; instead of having all their dimensions in millimeters they are now given in inches.

Mr. WITHERSPOON. Then a part of the cost of \$32,098 was for labor in drawing the plans?

Admiral GRIFFIN. Yes, sir.

Mr. WITHERSPOON. Then what royalty did you have to pay or was it all in one lump sum?

Admiral GRIFFIN. I will have to look up the contract and put that in the hearing. It was all covered in the lump sum of \$32,098.

Mr. WITHERSPOON. Were these patents German patents?

Admiral GRIFFIN. The engines are a German invention, but the invention is covered by United States patents.

Before we leave this subject I would like to have a proviso put in here, Mr. Chairman, that the use of this amount of \$250,000 be continued. I do not think it runs beyond this fiscal year.

The CHAIRMAN. Our idea was it would be available for the construction of the engines, but if you have any doubt about it, you can let us know later.

Admiral GRIFFIN. I request that the following proviso be incorporated in the bill to cover this point.

Provided, That the unobligated and unexpended balances of appropriation "Steam machinery" for the fiscal years nineteen hundred and twelve and nineteen hundred and thirteen, not exceeding in amount \$250,000, which were made available by the act of March fourth, nineteen hundred and thirteen, for the

development of a heavy-oil engine for one of the fuel ships provided by that act, shall be considered available for that purpose until expended.

Mr. ROBERTS. I want to ask you, Admiral, how that electric-driven collier is operated?

Admiral GRIFFIN. The trials that have been had up to this time have been quite satisfactory. Unfortunately there was an accident about six weeks ago which injured her turbine very seriously, and laid her up. The principal parts for the repairs have been shipped out, and are at Mare Island now, and some other parts are nearly ready for shipment. That is the information we got a few days ago from the General Electric Co. She will probably be ready for her trial within a month, I should say.

Mr. ROBERTS. What speed will she develop?

Admiral GRIFFIN. On the preliminary trials she has had she made about 14½ knots.

Mr. ROBERTS. Was she light?

Admiral GRIFFIN. No; she was loaded.

The CHAIRMAN. Admiral, you spoke of an accident. Was the boat in charge of a civilian crew or an enlisted crew?

Admiral GRIFFIN. An enlisted crew, with the representatives of the General Electric Co. on board. The accident was due entirely to the work of the General Electric Co.. A bolt got loose inside the turbine and damaged some of the blading.

The CHAIRMAN. And it was not due to any mismanagement on the part of the crew?

Admiral GRIFFIN. Absolutely not.

Mr. ROBERTS. Admiral, how will the expense of operating that engine compare with the expense of operating an internal-combustion engine or a reciprocating engine?

Admiral GRIFFIN. It would be much more expensive than an internal-combustion or a Diesel engine; that is, if you could get a Diesel engine of that power.

Mr. ROBERTS. What particular advantage is there in an electric drive over internal combustion?

Admiral GRIFFIN. It is claimed that it is very adaptable, of course, as electricity is to most operations, and that in backing you can utilize the full power just as you can in a reciprocating engine. In a turbine engine we do not provide full power for backing, because it would make the space occupied by the turbine prohibitive. In most designs we count on having about 50 per cent of the ahead power for backing. With the electric drive all the power can be utilized in backing.

Mr. ROBERTS. I saw not long ago in the press the statement that an English electric-driven ship had been sent in to the yards to have the electric features eliminated and was to go back, as I understood, to the reciprocating engine. Did you hear anything of that?

Admiral GRIFFIN. I think there was a small vessel—

Mr. ROBERTS (interposing). A small gunboat or something like that.

Admiral GRIFFIN. No; I do not think it was a gunboat. I think it was a small merchant ship.

Mr. ROBERTS. This was a naval ship that I read about.

Admiral GRIFFIN. I do not recall that.

Mr. ROBERTS. They had come to the conclusion that it was not feasible or practical, and they were going to discontinue having any more of that type.

Admiral GRIFFIN. Of course we have not gone far enough with the electric drive to determine whether it would be suitable for general application or not. The builders of it are very insistent that we equip all the battleships with it at once. I think the item to which you refer was intended to state that the electric machinery for operating the turrets was to be removed, but the press statement made it appear that it was propelling machinery.

Mr. ROBERTS. Now, Admiral, with the electric drive, if you should get a short circuit on almost any of your electric apparatus aboard ship, would it not short circuit the motive power as well. Take, for instance, a crane that was operated by electricity, if you had a short circuit on that crane, would not that run back and short circuit the engine that controlled the ship?

Admiral GRIFFIN. No; because they are entirely distinct. The electrical people claim that there would be absolutely no trouble from that.

The CHAIRMAN. Mr. Roberts was asking you about the turbine engines and the reciprocating engines. As between the two, what is now the opinion of the engineering men of the Navy as to the merits of the two types of engines? At one time it was the reciprocating engine, and they adopted then the turbine, and then later, as I understand, they discredited somewhat or got away from the idea of the turbine and thought of going back to the reciprocating engine. What is the state of opinion now as to the relative merits of the two engines?

Admiral GRIFFIN. Well, it depends very much on the power you want to use and the speed at which it is necessary to run the engine. The turbine engine, of course, offers very many advantages in the way of having uniform stress in your shafting, which is a very important matter, and when used in conjunction with the reduction gear it offers further advantages in being able to use much smaller turbines and to run them at very much higher speed and so secure greater economy.

The CHAIRMAN. How is the question of economy on slow speed, when they are running at slow speed, ordinary speed, instead of at full draft?

Admiral GRIFFIN. At the ordinary cruising speed the economy is somewhat less than that of the reciprocating engine. We have had considerable trouble with some of the turbines involving great delay in repairs.

The CHAIRMAN. Do you have any trouble with the turbines with the stripping of the paddles or blades?

Admiral GRIFFIN. Yes, sir. We have had some trouble with the main turbines of one type and with the cruising turbines of another type; that is, the turbines that are used only for cruising speed and which are thrown out at full power. In several of the destroyers we have had blades stripped from these cruising turbines, but we have had little or no trouble with blading in the larger or full-power turbines of this type.

Mr. ROBERTS. Do I undersand that at cruising speed the turbine is more economical than the reciprocating engine?

Admiral GRIFFIN. No, sir; just the other way. In some of the turbins the delays that have resulted on accoumnt of necessary repairs have been very embarrassing, and for that reason the reciprocating engine is considered preferable. I might mention that on the official trial of the *Texas*, held about two months ago, while she was still in the hands of the contractors, there was what appeared to be a very serious accident, and at first sight it looked as if she might have to return to the builder's works in order to make the repairs; but they got very busy and sent some of the twisted parts down to Fore River to be straightened in the forge, and other parts to the Bath Iron Works. Some had to be repaired, others to be renewed, but they had all the parts back and the engine together and ready for service in three days. I can not conceive of an accident that could happen to a turbine ship where we could get her ready in three weeks.

Mr. ROBERTS. The *Texas* has reciprocating engines?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Taking everything into consideration and weighing the pros and cons, the advantages and disadvantages of the two engines, and balancing them as a whole proposition, one against the other, what is the consensus of opinion of the engineering men of the Navy as to the two engines at this time, and which are you equipping the new ships with?

Admiral GRIFFIN. For high power and for speed above 20 or 21 knots we think the turbine is preferable. Below that we think the reciprocating engine is preferable.

Mr. ROBERTS. What is the greatest speed which has been made by any craft with the reciprocating engine?

Admiral GRIFFIN. In our Navy, you mean?

Mr. ROBERTS. Yes; or any other navy.

Admiral GRIFFIN. In our Navy I think the *Minneapolis*, with reciprocating engines, was the fastest large ship. She made 23 knots. The scout cruiser *Birmingham* later made 24.33 knots.

Mr. ROBERTS. What is the greatest speed which has been made with the turbine?

Admiral GRIFFIN. They claim about 36 knots in one of the British destroyers and 28 in a British cruiser battleship.

Mr. ROBERTS. In other words, it would not be possible to get the high speed of 30 knots or more with reciprocating engines in craft of that burden?

Admiral GRIFFIN. It would be very difficult, if not impossible.

Mr. ROBERTS. You could not get in the necessary machinery?

Admiral GRIFFIN. I think it very doubtful.

Mr. ROBERTS. Taking horsepower for horsepower as between the reciprocating and turbine engines, which of the two occupies the most space in the ship?

Admiral GRIFFIN. There is practically no difference. If you go to the reduction gear you do gain space with the turbine engine, but otherwise there is practically no difference in the space occupied.

Mr. BUTLER. You spoke of the high speed of the *Minneapolis*; did you mean the old commerce destroyer, Admiral Melville's ship?

Admiral GRIFFIN. Yes, sir.

Mr. BUTLER. She had three screws?

Admiral GRIFFIN. Yes, sir; and the *Columbia* also.

Mr. BUTLER. They were built more than 20 years ago?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. The new battleships that are being built now are designed for turbine engines?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. The next item is, "Engineering experiment station, United States Naval Academy, Annapolis, Maryland—Experimental and research work." That is on the grounds but is not a part of the work of the academy?

Admiral GRIFFIN. No, sir; it is across the river.

The CHAIRMAN. Last year you had an appropriation of \$60,000, and this year you are asking for \$60,000. Did you have any unexpended balance?

Admiral GRIFFIN. Practically none.

The CHAIRMAN. Will all of this amount be needed for the next year?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. The next item is "Equipment of building: For extension of steam, air, and water lines and electric circuits; for foundations for machinery; for purchase and installation of additional testing instruments"; and you are reducing the appropriation \$6,000?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Last year the appropriation was \$26,000 and this year the estimate is \$20,000. Will you need the whole of the \$20,000?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. What character of testing instruments do you desire to install?

Admiral GRIFFIN. Engineering testing instruments and instruments of allied character.

The CHAIRMAN. For the development of the station?

Admiral GRIFFIN. Yes, sir. We are always spending money for apparatus. Really that clause should read "For purchase and installation of additional testing instruments and apparatus."

The CHAIRMAN. Admiral, some time before the Christmas recess Mr. Cullinan, of Houston, Tex., called to see me, and he had some criticisms relative to the specifications, etc., about the purchase and use of fuel oil for the Navy. I said to him, "If you have anything of that kind which you wish to have taken up definitely, put it in writing." He said that he would do so, and since I came back, Saturday morning, I have received a letter from him dated December 29, 1913, in which he takes up in extenso various criticisms of the specifications of the Navy Department, which he has signed. I have not had time to take this matter up in detail, and so I am going to submit it to you and ask you to incorporate it in the hearings with your reply.

Admiral GRIFFIN. Yes, sir.

Mr. TALBOTT. What is the gentleman's business?

The CHAIRMAN. He said that he is a retired oil man; that he had been president of the Texas Oil Co., but that he sold out his interest and retired, and was now making this suggestion pro bono publico.

Mr. ROBERTS. What is the general tenor of his criticism?

The CHAIRMAN. This letter was just handed to me when I was coming to the meeting, but in talking with me he said that they were using too low a test, too low a flash point, as I remember, and that instead of having a low flash point and taking in cheaper oil, that they should have a higher flash point, which is a more expensive oil. However, I said to him that if he had any criticisms he wanted to make to submit them in writing and I would submit them to the responsible officers of the department and secure an expression of their views relative to his criticisms.

Admiral GRIFFIN. Our specifications do not require that the flash point shall be the figure named in the specifications but that it shall not be below that figure. Anybody can bid on a higher flash point and we will be glad to have them do so.

Mr. ROBERTS. The higher flash point means a more expensive oil?

Admiral GRIFFIN. Yes, sir.

Mr. ROBERTS. A refined oil?

Admiral GRIFFIN. Yes, sir.

Mr. ROBERTS. The specifications are prepared so that the oil shall not be below a certain flash point?

Admiral GRIFFIN. One hundred and fifty degrees.

Mr. ROBERTS. If anybody wanted to bid on an oil with a flash point of 250° and he had to bid against a man who had a cheap oil, his chance of being successful would not be very good?

Admiral GRIFFIN. Probably not, but if 150° meets our requirements, we should not be put to the expense of paying for more expensive oil. So far we have had no difficulty whatever with this 150° oil.

The CHAIRMAN. My recollection is that while there had not been, there was a more latent danger that there might be a serious accident?

Admiral GRIFFIN. I think that will apply to all oils.

Mr. ROBERTS. The high flash-point oil is more dangerous to handle than the low flash-point oil?

Admiral GRIFFIN. No; the other way.

LETTER FROM J. S. CULLINAN, HOUSTON, TEX.

DECEMBER 29, 1913.

HON. LEMUEL P. PADGETT,

Chairman Naval Affairs Committee, Washington, D. C.

DEAR SIR: Referring to my call on you on December 6, to discuss the question of specifications on fuel oil used by the United States Navy.

It is my understanding that, following the usual practice, bids for furnishing fuel oil for the fiscal year beginning July 1, will be requested soon after January 1.

I now wish to confirm what I stated to you on the above date—that, in my opinion, present specifications are not satisfactory; the objectionable features being—

First. Flash or fire point, meaning the temperature at which the fuel oil ignites, flashes, or burns, respectively.

Second. In failing to protect against an excess of sulphur.

Third. In viscosity.

The latter having only an incidental bearing in connection with raising the temperature to make the oil flow freely from tanks or bunkers to pumps or burners.

Without having a copy of the original specifications before me, my recollection is that the requirement is that the oil should not flash at less than 200° F., and that sulphur was limited to 1 per cent.

I am inclosing herewith copy of a letter which I wrote to one of our people under date of April 23, 1913, at the time consideration was being given to bidding on the United States Navy requirements for the fiscal year commencing July 1, 1913. At that time I was president of the Texas Co., and issuing instructions that would cover our policy in connection with Government business. I am no longer connected with the company in an official capacity; however, as stated to you, I feel that it is my duty as a citizen to direct your attention to this question.

For your ready reference the following are the specifications under which the last bids were called for:

"DEFINITION APPLYING TO ALL SPECIFICATIONS.

"(a) Fuel oil shall be a hydrocarbon oil of best quality, free from grit, acid, and of fibrous and other foreign matter likely to clog or injure the burners or valves.

"(b) The unit of quantity to be the barrel of 42 gallons of 231 cubic inches at a standard temperature of 60° F. For every variation of temperature of 10° F. from the standard, 0.4 of 1 per cent shall be added or deducted from the measured or gauged quantity for correction.

"SPECIFICATION NO. 1.

"(a) Gravity, 16° to 28° Baumé.

"(b) Flash point not below 175° F. (Abel or Pennsky-Marten's closed cup) for use afloat, and not below 150° F. for use ashore.

"(c) Water and sediment not to exceed 1 per cent. If in excess of 1 per cent the excess to be subtracted from the volume, or the oil may be rejected.

"(d) Oil to flow freely and in a continuous stream through a ½-inch circular pipe under a 2-foot head at a temperature of 40° F.

"(e) Calorific value not under 144,000 B. t. u. per gallon. Oil of a less calorific value may be accepted at a reduction of 1 per cent in price for each 1,000 B. t. u. or fraction exceeding one-half thereof, but no oil having less than 135,000 B. t. u. will be accepted.

"(ALTERNATIVE) SPECIFICATIONS NO. 2.

"(a) Gravity, 13½° to 28° Baumé.

"(b) Flash point not below 175° F. (Abel or Pennsky-Marten's closed cup) for use afloat and not below 150° F. for use ashore.

"(c) Water and sediment not over 2 per cent. If in excess of 2 per cent, the excess to be subtracted from the volume, or the oil may be rejected.

"(d) Calorific value not under 144,000 B. t. u. per gallon. Oil of a less calorific value may be accepted at a reduction of 1 per cent in price for each 1,000 B. t. u. or fraction exceeding one-half thereof, but no oil having less than 135,000 B. t. u. will be accepted.

"(e) The right is reserved to cancel the contract in case such difficulties are met in pumping, handling, and burning this oil as may, in the opinion of the department, render its use inadvisable.

"(ALTERNATIVE) SPECIFICATIONS NO. 3.

"(a) Flash point not under 150° F. (Abel or Pennsky-Marten's closed cup).

"(b) Water and sediment not over 2 per cent. If in excess of 2 per cent, the excess to be subtracted from the volume, or the oil may be rejected.

"(c) The right is reserved to cancel the contract in case such difficulties are met in pumping, handling, and burning this oil as may, in the opinion of the department, render its use inadvisable."

I call your particular attention to the reservation, article (c) under specifications No. 3. I feel sure that on reflection you will agree with me that applying this is wholly impractical, as crude, manufactured, and stored stocks, from the time the oil is produced at the well, moving to a definite end, may absorb months, or possibly years, before reaching the point of consumption.

There is a further feature in connection with this that should not be lost sight of, and that is that the fact that the company accepting Government contracts may furnish an oil better than the specifications while it suits their

convenience to do so should in no manner influence the Government or the department making the purchase.

Without undertaking to enter into details, my conclusions, which I feel sure are shared in by all practical oil men who have given the question consideration, are:

First. That, considering not only the lives and property involved in action, but the effect that failure or disaster to our fleet in action might have on the entire Nation, no question of an unnecessary hazard should be allowed to enter.

Second. That all bids should be called for under former specifications, or such reasonable modifications thereof as will insure their meeting all requirements.

Third. Acceptance or rejection of fuel oil tendered should not be discretionary with the Secretary of the Navy or subordinates, but should be a firm obligation of both the seller and the Government.

Fourth. All favoritism in the letting or receiving of supplies should be removed. You will please distinctly understand that I am not questioning the integrity of any of the officials now connected with the Navy Department, for whom I have the very highest respect. I am, however, questioning the judgment of the men who modified the specifications as now drawn.

I might add here that these specifications are much less rigid than the British, French, or Italian Navies, to whom the company I have been connected with heretofore has been furnishing fuel oil covering requirements in whole or in part. The standards adopted by them were made after careful tests and, at least in the case of the British Navy, against strong pressure for modification.

If, after considering the above, you deem it of sufficient importance to have the question further investigated, I will be glad to put you in communication with such persons as I know to be competent to discuss the question with your committee and with the naval officers in charge from both a practical and technical standpoint.

In conclusion, I am further taking the liberty to send you, under separate cover, a fuel-oil book gotten out recently by the Texas Co., that may be found of interest in connection with some of the technical questions involved.

Yours, very respectfully,

J. S. CULLINAN.

UNITED STATES NAVY, FUEL SUPPLY, FISCAL YEAR 1913-14—SPECIFICATIONS.

NEW YORK, April 23, 1913.

DEAR SIR: Referring to the file submitted, asking what our policy should be in connection with submitting bid on the above, my judgment has not changed since the same question was put up in regard to the British Navy, and I think that our action in this case should be the same, namely, that we should either make proposition based on the old specifications or decline to bid.

Without attempting to go into details or to follow the reasoning that leads to the conclusions reached, I have some very fixed opinions as to what our attitude should be in connection with any Government business solicited or accepted; that is, if we have any doubt in our own minds as to the product asked for under specifications submitted being entirely satisfactory for the purpose for which it is to be used, that we should, as above outlined, either quote on specifications that we know from our experience to be satisfactory, or decline to quote.

Regarding the specifications now submitted, there are two points that I consider seriously objectionable, the other points being simply commercial or operating questions of minor importance from my standpoint. The objectionable points are:

First, flash, which I consider they are undertaking to make too low for Navy purposes, and I feel quite sure that if further tests are made to arrive at maximum temperature, that may exist under any conditions at any time, at any point, exposed or otherwise, in loading or between storage and furnace, that they will reach the same conclusion. If they will further consider the question of a factor of safety above such maximum, of 25, 33, or 50 per cent, I feel sure they will find that in doing so it will quite reach present specifications of 200°.

Considering the cost only of a battleship or other Navy unit, aside from what may be dependent upon its efficiency, and the further safety under all condi-

tions of the officers and crew who man such unit, the question of a small additional cost for securing a fuel that is thoroughly safe, as against one that has an unmeasured hazard attached, should not be allowed to enter; nor should we offer to furnish without putting it squarely up to those responsible for furnishing such supplies.

I take it that temperatures of 125° are ordinary, and that under certain conditions temperatures of at least 150° may be expected, as I have frequently known such to apply at fuel plants on shore, and take it that we must anticipate even higher temperatures under certain conditions in the fireroom or at other points on the ship; or that if lesser temperatures apply, it will at times be heated to temperatures well above 150° .

The second point is the question of sulphur. It is my further judgment that no oil should be purchased or used for Navy purposes that does not provide for a maximum percentage of sulphur, as I consider this for their use as second in importance to the flash, and that sulphur should be eliminated as far as possible; and I feel quite sure that if a test is made our naval officers will reach the same conclusion, particularly if such test should be made while in southern waters or where dense fogs occur, while ships are at anchor or held in port for any length of time; and apart from the effect of an excessive quantity of sulphur to the ship and its machinery or equipment, you are of course thoroughly familiar with the deteriorating effects that an excessive quantity of sulphur has on storage tanks, pipe lines, pumps, and other facilities used in connection with the storage and handling of oil on shore.

As to what percentage in their case might be considered excessive I am not prepared to say, and this no doubt could be arrived at only by conducting experiments. However, I am very positive that if they leave the specifications wide open, as they are now proposing to do, they will receive tenders of oils that are wholly unsuited for Navy purposes. Simply as a suggestion, my thought is that the limit should be 1 per cent or under, and should certainly not exceed 2 per cent.

Yours, truly,

J. S. CULLINAN.

Admiral GRIFFIN. Mr. Cullinan, ex-president of the Texas Co., in his letter to Mr. Padgett attacks two specific features of the present Navy specifications of fuel oil, viz:

(a) Flash point, which he states should not be lower than 200° F., even if the cost of the oil is greater than the present 150° F. oil.

(b) Sulphur; no clause limiting the percentage of. Mr. Cullinan is uncertain as to what percentage should be specified, but suggests 2 per cent as the limit.

It will be of interest to the committee to understand why the specifications were changed. At the time of the proposed change the contract was held by the Texas Co., and the general result of the stringent specifications then in vogue was that a special and not a commercial oil was demanded. This obliged a contract with the Texas Co. whereby special tanks in their farms had to be set aside for the storage of Navy fuel oil, and put into operation a system of reports and analyses of oils in these special tanks that was cumbersome, to say the least.

In general, it may be said that all of the oil produced in the eastern part of the United States is too valuable for use as a fuel—that the only oils which by right should be used as fuels are those produced in Mexico and in California. This by virtue of the fact that the other oils are too valuable for burning oils, waxes, and lubricants, while the Mexican and California oils are poor in gasoline, burning oils, waxes, and lubricants, so that in many cases they may be safely used as a fuel without being refined—hence, they are very cheap. Inasmuch as these crude fuels are as rich in heat units per gallon as

the expensive refined fuel oils, the trend of any specification is clearly indicated. Note that the specification advocated by Mr. Cullinan definitely excludes Mexican and California oils, and thereby defeats at once the means by which cheap but efficient fuel may be obtained.

However, before the specifications were changed the department not only engaged the services of a consulting chemist of international reputation (Dr. Albert Sommer) and began a series of experiments of its own, but sought the opinion of all the large oil companies in the United States. In the determination of the proper flash point (i. e., that temperature at which the oil begins to give off inflammable gases), the following quotation from a well-known authority on petroleum gives the gist of the whole matter:

W. H. BOOTH. The question of safety and flash point is of importance. The British admiralty have hitherto required a flash point of 270° F. Lloyd's register of 200° F. is now reduced to 150°, while the German authorities have accepted as safe 150°. Fuel of the lower flash has been in constant use for four years in British and Dutch mercantile vessels with complete immunity from accident. It is not desirable to fix a flash point higher than is really necessary for safety, because high flash points are obtained by removing the more volatile parts of the liquid, so as to leave a thick and sluggish residuum which requires much power to pulverize into spray.

Mr. Cullinan is entirely mistaken in his conception of existing temperatures on board ship. A record of temperatures on torpedo-boat destroyers in tropical waters showed that with the temperature of the air 90° and sea 80°, the highest temperature in the storage tanks was 100° as a maximum (with one detached case of 120° when hot distilled water was being run into the cofferdam abaft an oil-storage tank), while the maximum temperatures at the settling tanks in the firerooms was 131° F. (thermometer near the boiler). It will thus be seen that a proper margin of safety exists.

The following oil companies expressed an opinion that 150° F. flash-point oil is a safe oil: Union Oil Co., of California; Associated Oil Co., of California; Standard Oil Co., of California; Inter-Ocean Oil Co.; Standard Oil Co., of New Jersey; Sun Co.; Gulf Refining Co.

Mr. Cullinan's opinion is the only unfavorable one that has come to the department's attention.

The consulting chemist was of the opinion that 150° F. is a sufficiently high flash point, and he recommended that the specifications be so framed.

Sulphur content.—To specify a low percentage of sulphur in the fuel oil will exclude California and Mexican oils from competition. On the subject of sulphur, the consulting chemist stated:

The only influence that sulphur can have on oil is due to the fact that it has not quite the heating value of carbon, and therefore a large percentage of sulphur in an oil will naturally depress its heating value. The depression is, with the percentage of sulphur in average asphaltic oil, even in Mexican and California oils, so little that for practical purposes it need hardly be considered. Mexican, as well as Californian factories, ships, and railways, are using enormous quantities of high sulphur oils to-day with the greatest economy; and in a very careful canvass, which the writer has had taken in California, and also in Mexico, he has not been able to establish one case of damage and complaint due to the actual influence of sulphur.

The department therefore removed the sulphur clause from the specification. At the same time the British Admiralty raised its sulphur percentage from 0.75 to 3. It appears that the Admiralty

might as well have followed the United States Navy's lead and have removed the clause entirely.

No deleterious effects from sulphur have been noted in the department's tests to determine possible damage to ships' tanks.

In conclusion the bureau has to state that the specifications to which Mr. Cullinan objects have been in satisfactory operation for over six months, and not one complaint has been received from ships on the quality, efficiency, and safety of the contract oil. On the other hand, the new specifications resulted in a saving of 5 cents a barrel in price; which, at the Navy's consumption for this year, will result in a saving of about \$20,000 per year.

The CHAIRMAN. Admiral, last year, out of the appropriation made for the Bureau of Equipment, I notice that the Bureau of Steam Engineering was apportioned by the Secretary \$1,734,300 for "Interior appliances and tools for manufacturing purposes in navy yards and naval stations," etc. Did you use all of that amount?

Admiral GRIFFIN. No, sir; we had a small balance, an unexpended balance of \$41,586.25.

The CHAIRMAN. How much are you estimating that you will need this year? Will you need about the amount specified there?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Is the balance of \$41,586.25 as near a calculation as it is safe for you to make?

Admiral GRIFFIN. We would not dare to cut any closer than that. In fact, toward the end of the fiscal year we are always on the anxious seat as to whether or not we are going to come out whole.

The CHAIRMAN. "For the purchase of all other articles of equipment at home and abroad, and for the payment of labor in equipping vessels therewith, and manufacture of such articles in the several navy yards," you were apportioned \$225,700?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Did you use practically all of that?

Admiral GRIFFIN. That is all covered; the amount I gave you as the unexpended balance was for the total allotment of \$2,162,000.

Mr. ROBERTS. In a general way, what is the nature of the articles paid for out of the appropriation?

Admiral GRIFFIN. The appropriation of \$225,700?

Mr. ROBERTS. Yes, sir.

Admiral GRIFFIN. Electrical equipment generally.

Mr. ROBERTS. This allows for the purchase at home or abroad?

Admiral GRIFFIN. The language "at home and abroad" merely refers to purchases for ships that may be in home or in foreign waters.

Mr. ROBERTS. I am endeavoring to ascertain the reason for separating that item from the first one? Why not make the whole thing \$1,734,300 plus the \$225,700?

Admiral GRIFFIN. As a matter of fact, that is the way the Treasury Department handles the appropriation; that is, it is all handled under the appropriation "Equipment of vessels."

The CHAIRMAN. This is the apportionment that the Secretary makes of the Bureau of Equipment appropriation.

Admiral GRIFFIN. I think, on the floor of the House several times, there has been complaint made that there was not enough detail given

of the expenditures; and Mr. Theall came to me some time ago and said that the committee would want a more detailed statement of how the money is expended.

The CHAIRMAN. Yes; I was going to ask if you had prepared the statement which I requested?

Admiral GRIFFIN. Yes, sir; I have that here.

The CHAIRMAN. Please put it in the hearing.

Bureau of Steam Engineering estimates for the fiscal year ending June 30, 1915.

Steam machinery:

For completion, repair, and preservation of machinery and boilers of naval vessels, including cost of new boilers.....	\$2, 975, 000
Distilling, refrigerating, aeroplane, and auxiliary machinery.....	514, 000
Preservation of and small repairs to machinery and boilers in vessels in ordinary, receiving, and training vessels.....	26, 000
Repair and care of machinery of yard tugs and launches.....	125, 000
Pay of classified force.....	450, 000
Purchase, handling, and preservation of all material and stores.....	1, 700, 000
Purchase, fitting, repair, and preservation of machinery and tools in navy yards and stations and running yard engines.....	124, 000
Incidental expenses for Navy vessels, yards, the engineering experiment station, such as photographing, books, stationery, periodicals, engineering indices, and instruments.....	6, 000
Total	5, 920, 000

Engineering experiment station:

For original investigation and experimentation of naval appliances and purchase of such machines and auxiliaries as may be considered suitable for use in the naval service.....	52, 000
Maintenance of buildings and grounds.....	8, 000
Extension of steam, air, and water lines, and electric circuits, and for foundations for machinery.....	6, 000
Purchase of additional testing instruments.....	14, 000
Total	80, 000

In all, Bureau of Steam Engineering, \$6,000,000; and the money herein specifically appropriated for the Bureau of Steam Engineering shall be disbursed and accounted for in accordance with existing law as "Maintenance, steam engineering," and for that purpose shall constitute one fund.

In the event of the abolishment of the Bureau of Equipment the following will be the subdivision of estimates under the Bureau of Engineering:

Repairs, preservation, and renewal of machinery and boilers.....	\$2, 975, 000
Distilling, refrigerating, air-craft, and auxiliary machinery.....	514, 000
Repair and preservation of machinery and boilers of vessels in ordinary, receiving, and training vessels.....	26, 000
Repair and care of yard tugs and launches.....	125, 000
Material and stores.....	1, 925, 700
Electric-signal communications and electric appliances.....	1, 279, 300
Coast signal service, including the purchase of land for radio shore stations.....	455, 000
Machinery and tools in navy yards and stations.....	124, 000
Classified employees.....	650, 000
Supplies for radio laboratory.....	5, 000
Photographing, books, stationery, periodicals, and incidental expenses generally for vessels, yards, and the engineering experiment station.....	8, 000
Total.....	8, 082, 000

Experiment station:

Research work and experiments	\$52, 000
Buildings and grounds.....	8, 000
Power circuits and foundations for machinery.....	6, 000
Testing instruments and apparatus.....	14, 000
Total experiment station.....	80, 000

In all, Bureau of Engineering, \$8,162,000; and the money herein specifically appropriated for the Bureau of Engineering shall be disbursed and accounted for in accordance with existing law, as "Maintenance, engineering," and for that purpose shall constitute one fund.

Admiral GRIFFIN. Yes, sir. I would like to say in connection with it that I suppose this statement is merely explanatory, and that the appropriation will not be made in this way. If the specific amounts were appropriated for this purpose we might be brought up standing during the fiscal year. For instance, a vessel might break a shaft, as the *Vermont* has done recently, and we might not have enough money for that specific purpose, based on what it cost the preceding year, to meet the expenditure. If so, we would have to tie that ship up for a year until you authorized more money for that specific purpose. In other words, while we try to give you as near as we can the distribution of cost for these various things, we think that the appropriation should be elastic enough to permit us to transfer from one to another as the exigencies of the service require.

Mr. TALBOTT. The detailed statement would not be the same for two years?

Admiral GRIFFIN. No, sir. On the *Vermont*, for instance, we have a job that will probably involve an expenditure of about \$40,000, for shafting, and next year we might not have a job that would require any such expenditure.

Mr. ROBERTS. And you might have two or three; that is one of the possibilities?

Admiral GRIFFIN. Of course, we try to make the total expenditure cover all our needs. That is what it is for. If we are tied down to any specific amount for certain purposes we might be able to perform the work very promptly, and have a good deal of money left over, but in another branch we might not be able to do the work for lack of money.

The CHAIRMAN. We understand that.

Mr. BUCHANAN. I notice mentioned here "the removal and transportation of ashes from ships of war."

Admiral GRIFFIN. That is under another bureau.

Mr. BUCHANAN. Do you know why that is included?

Admiral GRIFFIN. In a great many ports we are not permitted to dump ashes on account of the harbor regulations.

Mr. BUCHANAN. In foreign ports?

Admiral GRIFFIN. And in our own.

Mr. BUCHANAN. Do you contract for that work?

Admiral GRIFFIN. Usually there is a contract with some man in each port to haul the ashes away.

Mr. BUCHANAN. Has not the navy vessels to do that?

Admiral GRIFFIN. Down at Guantanamo there is an ash lighter, but none in our home ports.

Mr. BUCHANAN. Have you not barges or anything of that kind?

Admiral GRIFFIN. None suitable for that purpose.

Mr. BUCHANAN. Do you know anything about what the cost of that work is?

Admiral GRIFFIN. No, sir. I think you will find that itemized in the Paymaster General's hearing.

The CHAIRMAN. We asked him about that.

Admiral GRIFFIN. I think he has itemized a great many of these things in the hearing.

Mr. BUCHANAN. The thought occurred to me that it should be done by the Navy?

Admiral GRIFFIN. It could be done if we had the craft for doing it.

Mr. ROBERTS. Admiral, has your bureau furnished any figures at any time showing the relative cost of coal and oil for the same horsepower?

Admiral GRIFFIN. Performing the same work?

Mr. ROBERTS. Yes, sir.

Admiral GRIFFIN. No, sir.

Mr. ROBERTS. The reason I asked the question, last fall I was told while on one of the ships that the relative cost of sending the destroyers over to the Mediterranean with the fleet under coal and oil had been figured out, and the result of the figures, as I was told, was very startling as to the difference in cost between the coal and oil. To my recollection, it was five or six times as expensive to use oil as to use coal. It may not have been the destroyers. I am sorry that I did not take down at the time just the whole data so that I would understand it. It may have been that they were figuring on the use of oil on ships equipped for both oil and coal, I am not certain, but the difference was very wide; it was much more expensive to use the oil.

The CHAIRMAN. In one of the hearings which we had last year, and also in the hearing of Admiral Cowie the present year, it was developed that on the Pacific coast, where oil is cheaper than on the Atlantic coast or the Gulf coast and coal is much higher than on this coast, the use of oil is cheaper than coal, but on the Atlantic coast and the Gulf coast, where oil is higher than on the other coast, it would be otherwise.

Mr. ROBERTS. These figures were gotten up with reference to the cruise in the Mediterranean.

Admiral GRIFFIN. I have here some figures which are taken from the engineering competition reports going to show that the cost per mile of operating a destroyer with oil is almost exactly twice as much as operating with coal, based on the present price of oil.

Mr. ROBERTS. On this coast?

Admiral GRIFFIN. On this coast.

The CHAIRMAN. Admiral Cowie in his statement before the committee said:

Using Port Arthur, Tex., prices for oil (\$0.0331 per gallon) and Hampton Roads prices for coal (\$2.96), prices obtaining on the Atlantic, it costs a vessel over twice as much to steam 1 mile with oil as with coal. These conditions and figures are reversed in the Pacific, where oil is cheaper and coal more expensive—oil \$0.019003 and coal about \$8.

Mr. ROBERTS. As I recall the statement made to me, the basis of the comparison was not the miles steamed under oil or coal, but it

was on the per capita basis of the number of people transported on the ships; they made that the basis of the comparison.

Admiral GRIFFIN. The number of the people would be practically the same with an oil burner as with a coal burner; a very small difference.

Mr. ROBERTS. These figures were in relation to the number of people in the whole fleet.

Mr. BUCHANAN. Have you any information as to why oil is cheaper on the Pacific coast than on the Atlantic coast?

Admiral GRIFFIN. Only the general knowledge that there is more oil in that country. Of course, California is a great oil-producing State.

Mr. ROBERTS. And less market.

Admiral GRIFFIN. And there is very little good coal.

The CHAIRMAN. The question of oil, which the department is considering, is a very serious one. The consumption of oil for the present fiscal year is estimated at about 16,000,000 gallons, and for the next fiscal year it is estimated that we will use over 30,000,000 gallons.

Mr. BROWNING. In the Navy?

The CHAIRMAN. Yes, sir. The price of oil is going up. It has gone up more than 50 per cent during the last year, so that we are multiplying the consumption and very largely the companies are multiplying the price, and it is raising a very serious question. The Secretary is considering the question and we have been discussing with him some plan so that the Navy could make itself independent of having to purchase from these companies by reserving Government lands or acquiring them, if it is necessary, and the Government developing its own oil.

Mr. BUTLER. Have we any Government lands which will produce oil?

The CHAIRMAN. I understand that we have a considerable quantity in California.

Admiral GRIFFIN. The title is not clear.

The CHAIRMAN. There might be some litigation, perhaps. There was a gentleman who was in conference with the Secretary and myself during December, and he was representing a large oil interest out there which he was willing to sell to the Government, but it would involve an outlay by the Government of something like \$20,000,000. Then there was another gentleman who came here representing some interest in Mexico, and he said that they have already wells there that will produce 7,000 barrels of oil per day, and that if he could get an advance of about \$2,000,000 from the Government which would enable him to equip himself with oil vessels and build some large tanks on the mainland across the Gulf in southern Louisiana or Mississippi, that he would undertake to furnish the Government 7,000 barrels of oil a day at those ports at a price that would be something like 30 or 40 per cent below the market price.

Mr. BUTLER. Are those wells in the so-called Republic of Mexico?

The CHAIRMAN. Yes, sir.

Admiral GRIFFIN. As the chairman has said, we are equipping all of our ships to burn oil, and there is another question in connection

with that which you should understand, and that is that we are not building them so that we can return to coal if it were necessary. In other words, we are not making the boiler rooms as large as they should be for burning coal, and therefore if it should become necessary to stop burning oil we would be in a very bad way. Now, we can not get hold of the oil lands that have been reserved in California, because there is litigation in regard to them. It seems to be the general impression that we will not get one section of that land, and the others are in dispute. Recently the Secretary had two officers from the Bureau of Steam Engineering visit the oil fields. They went into the subject very thoroughly and investigated it as carefully as they could to ascertain as near as possible what it would cost us to produce oil, and after making all possible allowance and taking the very highest price of production the conclusion was reached that we could lease oil lands and produce our own oil for practically nothing. In other words, that the by-products, gasoline, paraffin, and things of that kind, which we would get from the oil would pay the operating expenses and the lease of the land.

Mr. ROBERTS. Do you mean just selling the gasoline and paraffin in bulk without marketing it on the part of the Government?

Admiral GRIFFIN. I think the marketing is all included in that.

Mr. TALBOTT. Admiral, could our vessels be so constructed that we could stop using oil and go back to coal?

Admiral GRIFFIN. It would cost more to build them.

Mr. TALBOTT. But it could be done?

Admiral GRIFFIN. Yes, sir; there are lands in Oklahoma, now held by the Osage Indians, which are very productive of oil. The Navy Department tried this year to get the Interior Department to reserve some of those lands for the use of the Navy, but the Interior Department decided that they were without authority to do that, that that department was really the guardian of the Indians in the matter, and that the lands would have to be put up to the highest bidder. Of course, we could not compete. The result was that we did not get anything out of that.

Mr. TALBOTT. Have we any oil fields in Alaska?

Admiral GRIFFIN. The Geological Survey says that there is oil there, but it is undeveloped, and I do not think the information in regard to that is sufficient to base any estimate upon.

Mr. WILLIAMS. Would it affect the capacity of a vessel to construct it so that it could be readily converted from an oil to a coal burner?

Admiral GRIFFIN. It would cost very much more or we would have to build a less powerful ship. By the use of oil we gain certain military advantages that nations which do not use oil can not get in their ships, and those advantages are considered of sufficient value to justify the use of oil.

Mr. WILLIAMS. Would it decrease the efficiency of the vessel to construct it for both purposes?

Admiral GRIFFIN. Yes, sir; it would.

Mr. WITHERSPOON. If you had two ships of the same size, and one was supplied with all the coal it could carry, and the other one was equipped for oil and supplied with all the oil it could carry, which could go the farthest?

Admiral GRIFFIN. The oil ship would go 40 or 50 per cent farther.

Mr. WITHERSPOON. Then, there would be a great advantage in the use of oil where you had to send the fleet to a very distant point?

Admiral GRIFFIN. Yes, sir.

Our estimate includes the production, maintenance, gathering, pipe-line cost, and refining, and the sale of gasoline and kerosene. After taking all of those into consideration, we arrive at the conclusion that under the very worst possible conditions we would get our oil for practically nothing.

The CHAIRMAN. Please put all of those figures into your hearing, and, if necessary, you can amplify them.

Admiral GRIFFIN. Yes, sir.

(The statement referred to is as follows:)

FUEL OIL FOR THE NAVY.

During the last fiscal year the Navy used about 400,000 barrels of oil. Its use is steadily increasing, inasmuch as all new destroyers, submarines, and battle-ships are to use oil only, and for the next fiscal year the estimate is for over 700,000 barrels. In another year it will be a million or more barrels, and the amount will steadily increase. This under normal peace conditions; under war conditions there might be periods when we would be using at the rate of five or six times that quantity.

We are now paying \$1.39 a barrel for oil at Port Arthur, and the best information obtainable points to a further increase in price.

The following information regarding the cost of production of oil was prepared by Lieut. Commander D. F. Boyd, United States Navy, an officer of the Bureau of Steam Engineering, who has devoted much time to the study of the subject, supplemented by careful investigation of conditions in the oil-producing territory and at the pipe-line terminals, and is believed to be as accurate a presentation of the case as it is possible to make at this time. The figures are based on a consumption of 1,000,000 barrels a year.

Analysis of the cost of fuel oil.—There are submitted four different estimates of the cost per barrel of fuel oil, viz:

First. The cheapest and most favorable estimate under the best circumstances—good luck in the selection and drilling of lands, use of own pipe lines, and efficient management.

Second. Same, except the oil to be piped by a common carrier and not by a Government-owned line.

Third. The largest and most unfavorable estimate of production—high bonus of leased lands, low average of luck in drilling; but oil to be piped by a Government-owned pipe line.

Fourth. Same as third, except oil to be piped by a common carrier and not by a Government-owned line.

Cost of 1 barrel of fuel oil (1.4 barrels of crude).

	Estimates.			
	(1)	(2)	(3)	(4)
Producing and maintenance of production.....	\$0.336	\$0.336	\$0.854	\$0.854
Gathering and pipe-line costs.....	.256	.840	.256	.840
Refining.....	.168	.168	.168	.1
Total.....	.760	1.344	1.278	1.862
Cost of gasoline and kerosene.....	1.430	1.430	1.430	1.430
Cost per barrel fuel oil.....	{ Free, plus \$0.67	{ Free, plus \$0.086	{ Free, plus \$0.152 }	.432

(Present price of fuel oil, \$1.39.)

Initial expense of leasing land, drilling, laying pipe line, and erecting refinery to secure these profits.

Scheme No. 1 (Government to lease and drill lands, lay pipe line to Gulf, and erect a refinery):

Lease of land.....	\$500,000
Drilling.....	3,900,000
Gathering and trunk pipe lines.....	4,000,000
Topping plant and terminal.....	542,000
Total.....	8,992,000

Scheme No. 2 (Government to lease and drill lands and erect refinery, but not to lay pipe lines):

Lease of lands.....	500,000
Drilling.....	3,900,000
Topping plant and terminal.....	542,000
Total.....	4,992,000

Total savings or expenses under these two schemes.

(A) Using estimate No. 1 (cheapest costs) and estimating on profits from handling 16,000 barrels of oil per day, carried for others as common carriers:

Profit on oil used by Navy.....	\$670,000
Profit on oil transportation.....	364,000
Profit per annum.....	1,034,000

It therefore appears that the Navy gets free oil thereby (a saving of \$1,400,000), and can also pay off initial costs in 9 years.

(B) Using estimate No. 2 (cheapest costs, but no pipe line):

Profit on oil used by Navy.....	\$86,000
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It therefore appears that the Navy gets free oil under this scheme (a saving of \$1,400,000) and also a meager profit.

(C) Using estimate 3 (highest costs, but Government pipe line):

Profit on oil used by Navy.....	\$152,000
Profit on oil transportation.....	364,000
	516,000

It therefore appears that the Navy gets free oil under this scheme (a saving of \$1,400,000), and can also pay off the initial costs in 18 years.

(D) Using estimate 4 (highest costs and no pipe line):

Cost to Government of oil for Navy.....	\$432,000
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It therefore appears that the Navy gets oil at a saving of about \$1,000,000 per year over the present purchase system (contract).

Résumé.—It is apparent from the foregoing that the saving to the Government under the most unfavorable estimate is \$1,000,000 better than present conditions.

RECOMMENDATIONS.

It is apparent, then, that the Government (should it produce its own oil) should save the large profit of pipe-line transportation now accruing to the pipe line companies by building its own pipe line.

This can not be done instantly, however. To successfully operate a pipe line contracts for handling a full-line amount of oil must be secured before the pipe line is laid. (The amount used by the Navy will be but one-fifth of the full-line capacity; the other four-fifths of the space can be used in piping oil as a common carrier).

The Navy must also secure its own production—secure leases, drill, and get and maintain its own supply—prior to building its own pipe line and to erecting a refinery.

For this purpose it is advisable to get an appropriation of \$500,000 to secure a lease of a modest amount of land as a beginner—say a quarter section of highly probable land; the remainder of the \$500,000 to be used in drilling and

in the acquiring of additional land at the best judgment of his manager in the field. The acquiring of land can thus be done in a common sense manner, and the expansion of the oil operations can be developed in a natural and logical manner.

Additional authority.—It must be understood that the profits depend upon the authority to sell the gasoline and kerosene distillates from the oil, also authority must be given to sell the fuel oil at the wells until the refinery is established. In brief, the Government must have the same rights as any company beginning operations therein.

Operations in California.—The time is not yet ripe for any recommendations for producing in California. The titles of lands in the Navy petroleum reserves are not clear, and the outcome of the suits for recovery of lands therein from the Southern Pacific can not be foreseen. Moreover, the status of lands will be influenced by the future decision in the Midwest Oil Co. case, which will determine the status of claims at the date of the order of withdrawal from entry of these lands.

No complete investigation of claims has yet been made by the General Land Office, which must be done before the Navy Department can with justice begin any operations therein. Again, much of the oil lies deep in the ground, which imposes an unfavorable and highly speculative condition.

Probably the most logical method of beginning operations in California is to await the outcome of the present suits for recovery of oil lands, and in case of decision favorable to the Government to take over the developed lands which may revert to the Government as additional portions of the Navy petroleum reserves.

(Thereupon, the committee adjourned to meet to-morrow, Wednesday, January 14, 1914, at 10.30 o'clock a. m.)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON NAVAL AFFAIRS,
Wednesday, January 14, 1914.

The committee met at 10.30 o'clock a. m., Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL ROBERT S. GRIFFIN, CHIEF
BUREAU OF STEAM ENGINEERING—Continued.**

The CHAIRMAN. Admiral, I will ask you to state to the committee the present status of the Alaskan coal proposition, what has been done, and all about it. Give us a full history of the matter.

Admiral GRIFFIN. The first appropriation for investigating Alaskan coal was \$75,000 for exploration in the Bering River field. The mining in that region was carried out under the direction of the Bureau of Mines. The Navy Department furnished a disbursing officer, Dr. Downey, who was also the medical officer for the expedition. He had no connection whatever with getting out the coal; but after it was mined, he and the naval party under him had charge of the transportation of that coal to a point on the Bering River, from which it could be transported in boats to the *Maryland*. I think you were told last year that the coal was brought over the ice in the winter time by a party under the charge of a hospital steward of the Navy.

Mr. BROWNING. A distance of how many miles, Admiral?

Admiral GRIFFIN. I think it was about 5 miles, something like that. The remaining distance, about 40 miles, was water transportation. The coal was delivered on board the *Maryland* last summer in Alaskan waters.

The CHAIRMAN. How much was brought down, 900 tons?

Admiral GRIFFIN. No, sir; less than that, about 600 tons.

The CHAIRMAN. Was it not first reported there were 900 tons mined?

Admiral GRIFFIN. I think they originally did report about 900 tons. I think it was reported as 855 tons, but we found that this estimate was in short tons, not long ones; and there was considerably less than that delivered on board the *Maryland*, something less than 600 tons. During the transportation of the coal a great many of the sacks were injured, practically destroyed, and a great deal of the coal had to be resacked, and during the resacking it was picked over to a certain extent; that is, any shale and impurities that were in evidence were thrown out, and after the coal was received on board the *Maryland* they proceeded to make a short test with it, but the result was so unsatisfactory that the ship reported to the department that it would be necessary to land the coal and clean it before they could hope to obtain any satisfactory results.

Mr. ROBERTS. What do you mean by cleaning it—taking the slate out?

Admiral GRIFFIN. Taking out the slate and shale, all the impurities that they could. The coal as mined contained a large percentage of impurities, that in the slack running over 27 per cent.

Mr. BROWNING. Is the Pocahontas coal we get here to put on board a warship cleaned in that manner?

Admiral GRIFFIN. It is not necessary to clean it like that. They clean it in mining—at the picking table.

Mr. BROWNING. I mean it is cleaned before it is marketed?

Admiral GRIFFIN. Yes.

Mr. BROWNING. And there is no such percentage of impurity?

Admiral GRIFFIN. No.

Mr. ROBERTS. Do you know what the Pocahontas coal runs?

Admiral GRIFFIN. The run of mine of Pocahontas runs about 6 or 6½ per cent.

Mr. BUTLER. What are the thermal units of this Alaskan coal?

Admiral GRIFFIN. From selected samples it runs practically as high as Pocahontas. I have some analyses here which I will give you later.

We landed that coal at Mare Island. It was put on barges there and cleaned and sun dried. I might add also that the coal that was delivered on the *Maryland* contained a great deal of moisture, about 4½ per cent. Now, the analysis of that coal at the mine, from selected samples, shows that it is very high-grade coal and, what might be called the laboratory test, indicates that the coal is a good steaming coal. After cleaning it, we made three separate tests of the coal, one a port test lasting a week.

Mr. ROBERTS. What do you mean by that?

Admiral GRIFFIN. A test on board the ship at anchor.

Mr. ROBERTS. Where you bank and keep your fires going in that way?

Admiral GRIFFIN. No; it is at a fairly good rate of combustion, for keeping up the activities of the ship, distilling water, running the electric-light plant, operating all the auxiliary service of the ship, and burning about 20 tons of coal a day on the big ships for that service. So the test was a very good one as demonstrating what might

be expected of the particular grade of coal under natural-draft conditions.

Mr. WILLIAMS. Admiral, do you mean that a battleship at anchor will burn 20 tons of coal a day for these auxiliary purposes?

Admiral GRIFFIN. Some of them do burn that much and more. They use a great deal of fresh water, for instance, on those ships, all of which has to be distilled.

Mr. BUTLER. And they also have a refrigerating plant?

Admiral GRIFFIN. Yes, sir; and for lighting, heating, and cooking. Even the cooking is sometimes done by electricity, and that is expensive. Any heating by electricity is expensive.

Mr. ROBERTS. What did that port test show?

Admiral GRIFFIN. Taking Pocahontas run of mine as 100 per cent, the port test averaged about 69 per cent efficiency.

Mr. BUTLER. How do you account for that when the laboratory test showed that it was a good-steaming coal?

Admiral GRIFFIN. That was from a chemical analysis of selected samples. The very best the *Maryland* got in that test was 79.4 per cent for two days of the test, during which only lump coal was used.

Mr. ROBERTS. Did I understand you to say lump coal?

Admiral GRIFFIN. Yes; the selected. Then we had a test with what might be called a run-of-mine coal, a mixture of lump and slack, and with this the efficiency was 71.77 per cent, while running with the slack they got only 61.2 per cent. The slack contained 27.66 per cent of refuse, the lump coal only something over 3 per cent, and the run of mine about 16 per cent. The next test the *Maryland* made—

Mr. ROBERTS (interposing). Will it interfere, Admiral, if I ask you here what proportion of that coal that you got out of the mine was lump coal and what proportion of it was slack?

Admiral GRIFFIN. I do not think I have that information, Mr. Roberts, but my impression is that there was a very fair percentage of what might be called lump coal; that is, not large lumps, but of small lumps as distinguished from slack.

Mr. ROBERTS. About the same percentage as in Pocahontas?

Admiral GRIFFIN. Probably better, because Pocahontas does not run to lump. The next test was a test running at 20 knots. The *Maryland*, of course, made that with ease; there was no difficulty whatever using Pocahontas coal. With the Bering River coal the very best she could do for the four hours was 18.6 knots.

Mr. ROBERTS. With selected coal?

Admiral GRIFFIN. No; that was the average coal, and that represented an efficiency as compared with Pocahontas coal of only 43 per cent—that is, she developed about one-half the power with the Bering River coal that she did with Pocahontas—and it took very much more coal per horsepower with the Bering River than it did with the Pocahontas, the net result of which is that the *Maryland* could steam only 43 per cent of the distance per ton of coal with Bering River coal that she could with Pocahontas.

Mr. BUCHANAN. What percentage did you say?

Admiral GRIFFIN. Forty-three; that is, the knots per ton of coal in one case would be 43 per cent of the knots per ton in the other.

Mr. BROWNING. Is the Pocahontas coal, as a general thing, selected coal, or is it the run of mine?

Admiral GRIFFIN. The run of mine.

Mr. BROWNING. Run of mine entirely?

Admiral GRIFFIN. Yes, sir.

Mr. WILLIAMS. Just where is this Bering River field with reference to the coast; how far inland?

Admiral GRIFFIN. The distance it was transported was about 30 miles.

The CHAIRMAN. The railroad is about 70 miles completed, and there are about 70 miles to be built.

Admiral GRIFFIN. You probably have the Matanuska fields in mind.

The CHAIRMAN. But as the railroad runs it would be about 140 miles?

Admiral GRIFFIN. I have here the exact distance. The distance that that coal was transported was from the camp to Cunningham cache by trail $4\frac{1}{2}$ miles, from that point to the anchorage of the *Maryland* in Controller Bay $25\frac{1}{2}$ miles, making a total distance of 30 miles.

The CHAIRMAN. That brought you to Katalla?

Admiral GRIFFIN. It was at first intended to take on the coal at Katalla, but the *Maryland* entered Controller Bay to the eastward of Katalla, and this shortened the water transportation about 15 miles.

The CHAIRMAN. You did not follow the line of the railroad?

Admiral GRIFFIN. No; there is no railroad near this field. The railroad is toward the Matanuska field.

Mr. WILLIAMS. Are there any other coal fields up there which are accessible by rail?

Admiral GRIFFIN. The Matanuska field. I will come to that later.

Mr. ROBERTS. You spoke of three tests of this Bering River coal. You have not given us the third one.

Admiral GRIFFIN. No, sir. The next one was a test at 15 knots. This was intended to be a 24-hour test. The Pocahontas test was run 24 hours, and the speed was made without difficulty with 10 boilers in use. With the Bering River coal they started out with 14 boilers, and afterwards put on 2 more, or all boilers, and further had to supplement this a little with forced draft in order to make the speed; in fact, they did not quite get it. They got 14.66 knots. The test was discontinued at the end of 12 hours, because the fires were very dirty and it was evident that it would be useless to continue it; that they could not keep up the speed with the Bering River coal. As a result of that, the efficiency of Bering River coal as compared with Pocahontas was figured at about 44 per cent.

Mr. ROBERTS. That was at 15 knots?

Admiral GRIFFIN. Yes, sir.

Mr. ROBERTS. And the percentage was 43 at 20 knots?

Admiral GRIFFIN. She made 18.6 knots.

Mr. ROBERTS. But the percentage of efficiency was 43 to 20-knot speed.

Admiral GRIFFIN. Yes, sir; if she could get the 20-knot speed with the Bering River coal. With Pocahontas her speed is 22.41 knots.

Mr. WILLIAMS. Is the Pocahontas coal a very high grade of coal?

Admiral GRIFFIN. That is considered the best grade of coal we get. In order to get some competition we buy four grades of coal which are considered equally good for our purpose.

Mr. BUTLER. What are the four grades of coal you buy?

Admiral GRIFFIN. Pocahontas, Georges Creek, Eureka, and New River, down in the Pocahontas field. Pocahontas and New River are very much the same kind of coal and come from southwest Virginia and West Virginia. The Pocahontas is considered the best of those coals, but there is very little difference in use. We find so little difference in them that we have had no complaints from the ships in engineering competition on account of having received one or the other of those coals.

Mr. BROWNING. Is not the New River coal considered the best next to the Pocahontas?

Admiral GRIFFIN. It is in its chemical qualities, but in actual use it differs very little from the Georges Creek coal. We get very good results from Georges Creek coal, although the analysis of Georges Creek does not show up as well as Pocahontas or New River.

Mr. ROBERTS. Admiral, you said the fires were very dirty at the end of 12 hours on that 15-knot test. Will you explain what you mean by the fires being dirty?

Admiral GRIFFIN. The coal forms very heavy clinkers.

Mr. ROBERTS. You mean this Bering River coal?

Admiral GRIFFIN. Yes. It forms very heavy clinkers, and these clinkers are very hard to dislodge.

Mr. BUCHANAN. How is it as compared with Pocahontas coal?

Admiral GRIFFIN. The Pocahontas makes very slight clinkers and they are very easily dislodged.

That brings me up to a test that we made at the experiment station. I will explain that to you. We realized that we would have to ascertain the very best that we could get out of Bering River coal, regardless of the test on the ship. So we had a carload of that coal sent to the engineering experiment station at Annapolis. There it was screened, picked, and washed, and the lumps selected out; at first everything that would pass over a seven-eighths screen, then one-half inch screen, and 4-mesh, after having been cleaned, of course, each time; and in washing we threw out all the slack. The instructions given to the experiment station were to wash and clean the coal as thoroughly as it could be done, in order to get a good comparison with Pocahontas. It was finally brought to about 6 per cent of ash, and the test was made last month. It was tested at the experiment station in competition with Pocahontas—that is, a similar test of each was made, the result of which was that the Bering River coal showed 75 per cent the efficiency of Pocahontas. It formed very heavy clinkers, so heavy that it took four men on the end of a slicebar to pry them off the grates.

Mr. BUTLER. Admiral, it must be full of sulphur.

Admiral GRIFFIN. No; apparently not. The analyses show, I think, very little sulphur. It is as low in sulphur as Pocahontas.

Mr. ROBERTS. Admiral, what makes it form those clinkers?

Admiral GRIFFIN. I do not know. But little is known on the clinkering of coal. Seemingly there is a tar in it that distills out, in addition to the clinker; and the temperature under this blanket of

clinker is so low that even the tar fails to burn. It hung in streamers below the grate.

Mr. ROBERTS. Is that tar a portion of the 4½ per cent moisture you spoke of as being in the coal?

Admiral GRIFFIN. No, sir. The coal to look at is as good-looking coal as you ever saw. It is bright and has a luster almost like anthracite. To look at it you would say that it is an excellent coal, and the result of the test was extremely disappointing. I thought it was going to show up very much better, especially after we had selected it and taken a great deal of care to see that the very best we might expect from that particular coal was tested.

Mr. ROBERTS. Admiral, will it interfere if I ask you about that 4½ per cent moisture? Is it a detriment to the coal to have that quantity of moisture?

Admiral GRIFFIN. It is, in the weight of the coal, you know. If you are buying coal you do not want to buy moisture, but it does not affect the quality of the coal. You have to dry out the moisture, of course, when it is burned, and this constitutes a loss.

Mr. ROBERTS. Does it affect its keeping qualities?

Admiral GRIFFIN. No; we think not, because we are keeping coal under water now at New London, and it has lost very little, if anything, in efficiency.

Mr. ROBERTS. Does that amount of water make the coal more dangerous to keep in bunkers.

Admiral GRIFFIN. I do not think so.

Mr. ROBERTS. On account of spontaneous combustion?

Admiral GRIFFIN. I do not think so at all, if not kept too long.

Mr. ROBERTS. But with that percentage of moisture in the coal you would not want to put it right under your boilers, and that would impair the efficiency of the coal?

Admiral GRIFFIN. Yes. In all tests of coal, you want to dry out the moisture before you start to run your test, because you do lose something if you are using a wet coal.

Mr. ROBERTS. Let me ask you if this 4½ per cent of moisture was due to the unfavorable conditions under which the coal was mined and brought to the ship?

Admiral GRIFFIN. It probably was. The rainfall is very heavy in the Bering River fields, and the coal had been frozen over all during the winter.

Mr. ROBERTS. In other words, you would not expect that amount of moisture from that Bering River coal if it were mined under the most modern methods and handled in cars as we handle coal from other developed mines?

Admiral GRIFFIN. No; except I believe they have a great deal of rain in that particular region, and it might be that in transportation it would accumulate a great deal of moisture.

Mr. ROBERTS. You mean it would necessarily accumulate a great deal of moisture?

Admiral GRIFFIN. Yes.

Mr. WITHERSPOON. Admiral, I understood you to say that the laboratory test showed this Bering River coal to be about equal to the Pocahontas coal.

Admiral GRIFFIN. Yes; the laboratory test of the lump sample, the best we could get.

Mr. BUCHANAN. I understood you to say 75 per cent.

Admiral GRIFFIN. No; not the laboratory test.

Mr. WITHERSPOON. You say we buy four kinds of coal which are practically equal in efficiency?

Admiral GRIFFIN. Yes, sir.

Mr. WITHERSPOON. How does the laboratory test of those four kinds of coal harmonize?

Admiral GRIFFIN. Very closely.

Mr. WITHERSPOON. How do you explain that the laboratory test of the four kinds that we use harmonize with a practical test, and there is such an immense difference between this laboratory test of the Bering River coal and the actual test with Pocahontas coal?

Admiral GRIFFIN. I do not know how to explain that. Perhaps I used the words "laboratory test." I did not mean a test, but the analysis.

Mr. WITHERSPOON. How do you explain that?

Admiral GRIFFIN. I do not pretend to explain it. I have not with me the reports from the experiment station. It appears, however, that the formation of clinker is responsible for the poor results.

Mr. WITHERSPOON. Is it possible that the coal used in the test on the *Maryland* was not a fair sample of the entire vein and that if they dug deeper it would possibly be better?

Admiral GRIFFIN. I believe in most mining operations it is claimed that the deeper they go the better the coal; and some of the miners, or one miner rather, who was in the expedition last year, claimed that we did not get out a representative sample of Bering River coal; that large masses of impurities were mined in it, as he charged, purposely.

Mr. BUTLER. On purpose, Admiral?

Admiral GRIFFIN. Yes. In other words, he charged that in mining they did not separate the shale. Whether it was possible to do that or not, I do not know.

Mr. ROBERTS. Was he a representative of the Bureau of Mines?

Admiral GRIFFIN. No, sir; but I believe he had been employed by them.

Mr. ROBERTS. Was he a member of this party that did the actual mining?

Admiral GRIFFIN. I understand he was.

Mr. ROBERTS. As an outside employee?

Admiral GRIFFIN. Yes, sir.

Mr. BROWNING. I take it from what you say that one of the serious defects in this coal is that it forms clinkers, and they fasten themselves to the grates?

Admiral GRIFFIN. Yes, sir.

Mr. BROWNING. And a defect of that kind in coal on one of our battleships would be a very serious defect?

Admiral GRIFFIN. Oh, yes, sir. We could not use it at all. A ship could not get out of her own way.

Mr. BROWNING. As I understood you, that was from selected coal?

Admiral GRIFFIN. That was the selected coal?

Mr. BROWNING. The very best samples of the coal you could get?

Admiral GRIFFIN. The very best that we could hope to get from that particular opening. That was the selected lump.

Mr. ROBERTS. Admiral, we have been told that one of the things demonstrated by previous experiments with some of this Alaskan coal is that under forced draft the coal will go up the flue, that it was fine and powerful drafts would carry it up. I do not mean in this test, but in a prior test, where they got out a few hundred pounds of coal two or three years ago and made a partial test.

Admiral GRIFFIN. We had no difficulty of that kind.

Mr. ROBERTS. You had none of that sort of trouble in these tests?

Admiral GRIFFIN. No; there was no torching in the smoke pipe, no combustion taking place in the smoke pipe, such as we have had with the west coast coals. There was no report of that. There was a report that after the 15-knot test on the *Maryland* the boilers were very dirty.

Mr. ROBERTS. We have been told in this committee that the Alaskan coal—I can not, perhaps, explain it in technical language—but the seams of the veins of the coal by some geological change have been so broken and crushed that you could not get out anything but a fine coal, almost a dust, so to speak, and that when you put it under your boilers with a forced draft, instead of its burning, it would be carried up the smokestack.

Admiral GRIFFIN. I have not seen this coal myself—

Mr. ROBERTS (interposing). And that was demonstrated, so we were told, in a partial test that was made several years ago with some coal from that region.

Admiral GRIFFIN. We had no report of that fault from the *Maryland*, and from a sample of coal that I saw, a big lump sent to the bureau, I would say that it would break up rather in cubical crystals than in fine dust, as Pocahontas does. In other words, there would be a decidedly granular formation, and the cleavage would be rectangular.

Mr. BATHRICK. Is there any record as to how many tons of Bering River coal were used as compared with Pocahontas coal in going an equal distance?

Admiral GRIFFIN. The ship would steam 43 per cent the distance that she could with Pocahontas. The knots per ton of coal would be 43 per cent.

Mr. WITHERSPOON. Admiral, are there any other uses that the Navy would have for this Bering River coal that would make it valuable besides being used on the ships?

Admiral GRIFFIN. I do not think so, because we use very little coal, or comparatively little, in the navy yards, except for power plants. Most of the fuel used for other purposes is oil. We use a great deal of oil now for shop purposes, and except in the power plants we use very little coal. The port test on the *Maryland* would indicate that the coal would not be suitable even for power-plant use.

Mr. WITHERSPOON. This test shows that it is impracticable to use it for that purpose as well as to use it for the ships, does it?

Admiral GRIFFIN. Of course it is possible that if the coal be used with automatic grates, shaking grates, that the clinkers might not form in such large masses; that is, it would be kept broken up more than with the fixed grate. We use a fixed grate, and it might be that with a grate that is kept in motion all the time the clinkers might be broken up more.

Mr. WITHERSPOON. Well, say that that disadvantage about the coal might be obviated in using it in the power plants, would this test for efficiency show that it would require so much more of the coal to generate the same amount of power that it would be inadvisable to use it for power plants?

Admiral GRIFFIN. The port test showed about 70 per cent efficiency, and it would depend on whether they had a reserve of boiler power in the plant. If they had a reserve of boiler power it might be used, but with greater expense of operation.

Mr. WITHERSPOON. To advantage?

Admiral GRIFFIN. Yes; if the price was all right.

Mr. WITHERSPOON. Well, we would not have to pay anything for it, because it belongs to the Government.

Admiral GRIFFIN. I do not so understand it. The mining costs will be high, and so will transportation costs. This cost a good deal to get out, about \$90 a ton, in absence of railroads and other transportation facilities.

Mr. BATHRICK. Was there any laboratory test made as to how many pounds of water could be evaporated with a pound of this coal compared with other coals?

Admiral GRIFFIN. Yes, sir; the test at Annapolis was an evaporative test. The evaporation for three hours showed up very well, but after that it fell off very rapidly. I thought I had the report of that test with me, but I find I have not.

Mr. BATHRICK. Do you remember what the falling off was due to?

Admiral GRIFFIN. To the formation of clinkers and the fires getting dirty.

Mr. BROWNING. Admiral, you were speaking of these shaking grates, it might be that the clinkers would not form on the grates, but they would form just the same, and there would be the trouble of getting them out?

Admiral GRIFFIN. Yes.

Mr. BROWNING. And they would probably form so large that they would not go through the space in which the grates slide backward and forward?

Admiral GRIFFIN. Yes. I think you would not get as large ones. You would keep them broken up more.

Mr. BROWNING. You would not get as large ones, of course, but they would probably be large enough not to go through the openings in the grates, and the disadvantage would be about the same.

Admiral GRIFFIN. No; not the same. I think it would lessen the size of them, but not the quantity.

Mr. WITHERSPOON. Admiral, how far is the other coal, of which we have taken a sample, from this Bering River mine?

Admiral GRIFFIN. I do not know the distance, but I can put it in the record. It is in a different part of Alaska, northwest of Katalla, and the Bering River is northeast. [The Matanuska fields are about 200 miles from Katalla and 150 miles from Seward.]

Mr. WITHERSPOON. Does the inefficiency of this Bering River coal, as shown by the tests, give any reason to believe that the other coal will also be inefficient?

Admiral GRIFFIN. No, sir; they are so widely separated that we might expect a very different character of coal.

Mr. ROBERTS. I would like to ask the admiral one or two more questions in regard to the Bering River coal. Have your tests been continued long enough to give you any data as to the effect of the Bering River coal on the grate bars and boiler flues?

Admiral GRIFFIN. No, sir; but where you have a formation of such heavy clinkers the grates would burn out very rapidly.

Mr. ROBERTS. Is there anything in the chemical analysis or the result of your experiments which would lead you to believe that the Bering River coal would have any bad effect on the boiler flues?

Admiral GRIFFIN. Nothing whatever. I will put in the record a representative analysis of the Pocahontas coal and one of the Bering River coal, so you can see just about how they compare.

The CHAIRMAN. Please put in several of the relative tests so as not to rely upon any one, if there is a variation.

Admiral GRIFFIN. There is a wide variation.

Comparative steaming tests of Pocahontas and Bering River coals by the U. S. S. Maryland.

1. The U. S. S. *Maryland*, an armored cruiser of 15,138 tons full load displacement, was designated to conduct the comparative steaming tests of Pocahontas and of Bering River coals. This vessel has the following characteristics: Length over all, 503 feet 11 inches; beam, 69 feet 6½ inches; mean draft, 24 feet 1 inch; speed on trial, 22.41 knots; displacement on trial, 13,749 tons; bunker capacity to bottom of beams (43 cubic feet to the ton) 2,054 tons; main engines, 2 vertical 4-cycle triple expansion; cylinder diameters, 38½ inches, 63½ inches, and 74 inches; stroke, 48 inches; boilers, 16 B. & W.; total grate surface, 1,600 square feet; total heating surface, 70,944 square feet; indicated horsepower of propelling machinery and auxiliaries on trial, 28,059.

2. The Bureau of Steam Engineering issued the following instructions for the comparative trials:

WASHINGTON, D. C., April 16, 1913.

From: Chief of Bureau of Steam Engineering.

To: Commanding officer of U. S. S. *Maryland*.

Subject: Instructions for steaming tests Bering River (Alaska) coal.

1. The bureau has been informed by the department that the U. S. S. *Maryland* will conduct the steaming tests to be held with Bering River coal recently mined in Alaska, and has been directed to draw up instructions for the tests.

2. At the present date this coal is in bags at Stillwater Creek awaiting the breaking up of the winter ice so that transportation to Controller Bay will be possible. Further notice will be given when the coal has arrived at Chilkat (Controller Bay), inasmuch as an estimate of time to bring the coal down the Bering River is hard to make at present.

3. In order to insure this coal being thoroughly cleaned, the bureau desires that the coal be inspected either before loading on the barges or upon arrival on board. Such cleaning as may be necessary shall be done in order to bring the coal up to a standard of well-cleaned run-of-mine. Also the bureau desires special inspection of the lump coal which was obtained from one of the mines in order to note its friability and the breakage in handling. This lump coal has been kept separate from the remainder of the coal for just such an inspection. After inspection this coal should be mixed with the remainder so that the entire lot may be of about the same grade. The number of cubic feet to the ton should be ascertained and reported.

4. The bureau desires two complete sets of tests, one to be with run-of-mine Pocahontas coal and the other with Bering River coal. Each set of tests shall consist of—

(I) An uninterrupted period of not less than seven days in port, during which time steam shall not be upon the main engines for any purpose. The auxiliaries in use shall be the same in both series of tests, equal duty to be performed. If any discrepancy unavoidably occurs, it shall be noted and allowance made therefor as noted below.

(II) A test at sea with not more than three-fourths boiler power and at a speed of about 15 knots. This test to last 24 hours.

(III) A test at sea under full-boiler power at a speed of 20 knots. This test should last 4 hours.

(IV) A test at sea at a speed of 10 knots for a period of 48 hours.

The sequence of these four features of the test will be determined by you, but the sequence adopted for the first test must be followed during the second test.

5. Upon receipt of each coal to be used in these tests, samples for chemical analysis will be taken and forwarded to the Bureau of Steam Engineering. Care must be used to make these samples represent as nearly as possible the average of the entire lot of each coal. To this end small samples (shovelful) should be taken throughout the coaling, the small samples to be placed in one pile, divided into quarters, and two of the quarters rejected, the other two to be crushed; this quartering and crushing to continue until a final sample of about 4 pounds is obtained. This is the sample for transmittal in a sealed receptacle to the bureau for analysis.

6. The bureau desires that all data of the tests be prepared by a board to be appointed by you, with instructions to include all the data called for herein arranged in tabular form.

7. Should there be any difference in the auxiliaries used and duty performed by them, the board should allow therefor.

8. In the tests underway every effort shall be made to keep the revolutions corresponding to the prescribed speeds constant. Should discrepancy between the two tests unavoidably exist, the board should reconcile coal consumption by the formula laid down in the Rules for Engineering Competitions.

9. During the four-hour full-speed runs indicator cards should be taken once per hour; in the other runs once per watch. The pounds of coal per horsepower should be computed by the board and entered in an appropriate column of the tabular report. The cruising radius at each speed should be calculated and reported.

10. Copies of the engineer's log for the period of the tests should be submitted. The results of flue-gas analysis should also be reported.

On each test all data required by the Rules for Engineering Competitions should be taken.

11. During the entire period of the test the strictest care must be taken to preserve the absolute accuracy of the coal accounts. The weight of the coal as originally received must be checked in as many ways as possible. These checks must be detailed in the board's report. The weight of the coal, as used on board ship, should be checked by frequent weighing of the buckets, as well as by inspection of the bunkers. The weight of the ash must be obtained accurately. The ash should be weighed dry, and not wet. The amount of clinker should be especially reported upon, and the board should attempt to determine the exact weight of the clinker. Any special difficulties in firing, or any special methods used in firing, should be described in the board's report.

12. During each test the bureau requests that particular attention be paid to the effect upon the grate bars of the different kinds of coal used. The number of grate bars that it is necessary to renew in order to put the boiler furnace in a fit condition for further general use shall be noted at the conclusion of each test and the result shall be included in the board's report. The bureau further desires to be informed concerning the amount of soot deposited on the boiler tubes. In each test special statements should be made of the frequency with which it is found necessary to clean the boiler tubes. The report should also state the relative amount of smoke made by the different kinds of fuel and the effect upon boiler casings of burning the different fuels. In reporting the amount of smoke use the Ringelmann scale and submit smoke records together with appropriate photographs showing extreme and average conditions.

13. In view of the fact that the characteristics of Bering River coal, so far as giving off of explosive gases are concerned is unknown, extra precautions should be taken in entering bunkers.

14. In every test the report should include a complete description of any unusual characteristics or peculiarity of the fuel that is tested. If, for example, any tendency to spontaneous combustion is noted, or if any special ease or difficulty in handling or stowing is experienced, or if any peculiar good or bad qualities are exhibited, the board's report should include a detailed statement of those qualities.

15. The report of the board should in each test include a specific recommendation stating whether or not the coal tested is recommended for future and more extended tests to determine its value for general naval use under standard-service conditions.

16. At this time it is impossible to state definitely the quantity of Bering River coal that will be landed on board the *Maryland*. The conditions of transportation are such that loss of some of the coal may be expected. The order and length of the different portions of the test are, therefore, left to the discretion of the commanding officer. The complete full-power run must, however, be made, together with such preliminary work as will allow the firemen and water tenders to develop methods of firing this new coal.

17. The bureau wishes a complete description of the action of the coal on the grate, and the methods of firing. As many photographs as possible should be submitted in order to show the general appearance of the coal when received, the character of the ash and clinker, the effect on grate-bar casings and uptakes, smoke, and (if possible), the appearance of the coal on the grate.

18. In order that the Pocahontas coal received may not be unduly weathered, Pocahontas coal cargo, recently received, should be taken on board at Tiburon or at Mare Island.

19. Attention is invited to the importance of the test of these coals, and to the necessity of care in taking and preparing the data. The Bering River coal represents a considerable outlay of money. Moreover, the report of the suitability or unsuitability of this coal for naval use will have important bearing on the source of supply of coal for the Navy; and, possibly, will affect the interests of many citizens of the country. It is, therefore, requested that all operations of the vessel be made secondary during these trials in order that the tests may receive the undivided attention of the board.

(Signed) H. I. COVE.

3. The board referred to in the letter of instructions was composed of the following officers: Capt. John M. Ellicott, U. S. Navy; Lieut. Milton S. Davis, U. S. Navy; Lieut. Herbert E. Kays, U. S. Navy.

This board conducted the trials with Pocahontas coal. Capt. John M. Ellicott, U. S. Navy, having been detached from the command of the *Maryland* prior to the Bering River tests; Commander Philip Andrews, U. S. Navy, served as senior member during the last-mentioned tests and also on the four-hour, full-boiler-power, Pocahontas run.

4. *Coal used on the Pocahontas tests.*—The coal used during the Pocahontas port test, 15-knot test, and 10-knot tests, was received from the naval coal depot, Tiburon, Cal., on May 3, 1913. This depot had received this coal on March 14–19, 1913, and March 20–27, 1913, from the chartered colliers *Inveran* and *Georgian*. These colliers had, in turn received this coal at Lamberts Point, Va., on January 11–13, 1913, January 22–24, 1913. The coal was from the following mines: Lynchburg, Page mines, Nos. 1, 2, and 3; Crozer, Nos. 1 and 2; Superior Pocahontas, No. 1; Goodwill, Nos. 3 and 4; Powhatan, Louisville, No. 1; Upland, Pawana, Nos. 1 and 2; Greenbrier.

Analysis of representative samples of this Pocahontas coal gave the following results:

Volatile	per cent..	19.1
Fixed carbon		74.6
Ash		6.3
Sulphur		0.70
British thermal units		14,630
Moisture, as received	per cent..	2.5

At the end of the trials the board reported this coal to contain but a small percentage of lump; that the loss through the grates was small, and that it was found to be an excellent steaming coal, requiring only moderate working and not clinkering badly.

The Pocahontas coal used on the four-hour full-boiler power run was received from the navy yard, Mare Island, Cal. This coal had been delivered at Mare Island by the steamer *J. A. Hooper*, which steamer had in turn been loaded at Lamberts Point, Va., on December 2–3, 1912. This coal was from the following mines: Empire, Virginia, Pocahontas, Arlington, Central, Turkey Gap, and Hiawatha. Analysis of representative samples of this coal gave the following results:

Volatile	per cent..	17.9
Fixed carbon	do....	73.7
Ash	do....	8.4
Sulphur	do....	.54
British thermal units		14,330
Moisture, as received	per cent..	2.3

At the end of the trial the board reported this coal to be of excellent quality, with a moderate amount of slack and not weathered; and that little ash and clinker resulted therefrom.

5. *Coal used on the Bering River tests.*—This coal was the Bering River coal, received by the *Maryland*, at Controller Bay, on July 31–August 3, 1913, as previously noted. This coal when received was exceedingly wet and had not been satisfactorily cleaned. The board noted that the lump was clean, bright, but friable; that the lumps were generally free from coal bone; but that the slack appeared to include sand or powdered shale or slate. Analyses (moisture free) of two representative samples of the coal, taken while loading at Controller Bay, as laid down in the instructions from the Bureau of Steam Engineering, gave the following results:

	Sample No. 1.	Sample No. 2.
Volatiles.....	17.7	16.7
Fixed carbon.....	61.9	59.9
Ash.....	20.4	23.4
Sulphur.....	.65	.60
B. f. u. per pound.....	12,180	11,740

The moisture content taken by the board was 5.2 per cent.

In view of the necessity of drying and recleaning, the coal was loaded into empty bunkers and taken to the navy yard, Mare Island, Cal., where it was unloaded and subjected to four screenings, the smallest mesh being one-half inch. The slack was not washed. All coal was dried, the resulting analyses of 10 samples showing as follows:

Kind.	Percent- age.	Moisture	Volatile.	Fixed carbon.	Ash.	Sulphur.
Lump.....	10.0	0.40	17.25	79.16	3.09	.....
Nut.....	12.5	.83	17.50	79.44	2.33	0.72
Pea.....	31.0	.50	16.65	73.07	9.78	.....
Slack.....	46.5	.90	15.62	55.82	27.66	.....

The percentages quoted refer to the total weight prior to picking out 1.7 per cent slate and removing about 4.5 per cent of moisture by drying.

The coal having been dried and cleaned, it was placed on board the *Maryland* for test.

The composite analysis of this reclaimed and dried coal is as follows:

Moisture.....	0.73
Volatile.....	16.34
Fixed carbon.....	68.44
Ash.....	16.49

6. *Seven days' port test.*—The seven days' port test with Pocahontas coal was held from 8 a. m. May 5, to 8 a. m. May 12, 1913, and with Bering River coal from 8 a. m. August 14, to 8 a. m. August 21, 1913. Boiler No. 8 was used in both cases; the load on the ship being the same in both cases, the difference being only one-third of 1 per cent. The coal, water, ash, and clinker were weighed and accurately tallied.

The same grade of run-of-mine coal was used during the entire week that Pocahontas coal was tested. During the Bering River port test screened lump was used for two days, run-of-mine for two days, and slack for three days. The comparative results of these tests are as follows:

	Average water evapo- rated per day.	Average coal per day.	Average coal per day, equal duty.	Percent- age of ash and clinker, dry.	Percent- age clinker in ash.	Smoke density (Ringel- mann).	Average CO ₂ .	Percent- age of effi- ciency.
Pocahontas, run of mine.....	<i>Galls.</i> 35,515	13.470	13.47	11.04	27.3	0.9	8.41	100
Bering River, screened lump.....	36,442	17.412	16.97	25.55	53.7	1.1	10.95	79.4
Bering River, run of mine.....	37,813	20.021	18.80	30.85	42.95	1.1	11.00	71.7
Bering River, slack.....	33,092	20.509	22.01	39.07	40.40	.8	8.9	61.2

The final comparative results, reconciled for equal duty, are as follows:

Kind of coal.	Tons of coal used, equal duty.	Comparative efficiency.
Pocahontas.....	94.291	Per cent. 100
Bering River.....	136.84	68.9

Conclusion.—Neither the screened lump, the run-of-mine, or the slack Bering River coal is the equal of Pocahontas coal for this duty.

FOUR-HOUR, FULL-POWER, FORCED-DRAFT, 20-KNOT TRIALS.

Coal used.—Pocahontas run-of-mine and Bering River run-of-mine, as previously described.

Trial with Pocahontas coal.—This trial was held on August 29, 1913, from 11 a. m. until 3 p. m. All boilers were in use under moderate forced draft. The 20-knot speed was maintained with the greatest ease and with little effort on the part of the firemen. There was but little ash or clinker, and the boilers were fairly clean at the end of the run. The smoke was heavy and black, with a moderate amount of clinder.

Trial with Bering River coal.—This trial was held on August 26, 1913, from 3 p. m. to 7 p. m. All boilers were in use with 2 inches air pressure. Clinkers and ash in excessive quantities were produced. Every effort was made to make a speed of 20 knots, the firemen working to the point of collapse. Constant removal of clinker was necessary. The average speed made was 18.6 knots, the highest attained being 19.3 during about 15 minutes of the time, while using lump coal. No damage to boilers or uptakes was found after the trial. Two grate bars were renewed.

The absence of smoke on this forced-draft run was remarkable, and in contrast with the heavy black smoke noted on the Pocahontas run. The smoke from Bering River coal was light brown, almost transparent, easily dissipated, and, in general, less pronounced than that ordinarily made in port by the *Maryland*.

With fires sufficiently thin for good combustion steam could not be maintained, and much coal fell into the ash pans. After the coal had coked it packed into a solid bed, which offered resistance to the air so as not to admit sufficient air for good combustion. Where air currents found their way through the coal, bed clinkers formed very rapidly. Some clinkers were of such size as to require breaking up before they could be removed through the furnace doors. The coal was generally slack with few lumps.

The comparative data of these trials are set forth in the following table:

	Pocahontas.	Bering River.
Average speed, knots.....	20.2	18.56
Coal used, tons.....	79.1	127.3
Coal used, equal duty.....	79.1	184.7
Per cent ash and clinker, dry.....	8.8	38.8
Per cent clinker, in ash.....	4.7	17.4
Smoke density, Ringelmann.....	2.4	1.5
Per cent CO ₂	8.2	5.9
Average temperature uptakes, °F.....	588	551
Average indicated horsepower, main engines.....	20,820	13,992
Pounds coal per indicated horsepower, based on indicated horsepower, main engines only.....	2.14	5.00
Knots per ton, at 20.2 knots.....	1.02	.437
Coal, cubic feet per ton.....	39.9	39.83
Cruising radius, 20.2 knots speed.....	2,257.7	969

¹ Based on indicated horsepower, given in tenth line, taking 639 as the indicated horsepower of auxiliaries in use with Pocahontas and 789 with Bering River, and assuming that the total coal will be in proportion to the total power actually developed and the total power necessary for 20.2 knots.

The final comparative results are as follows:

Kind of coal.	Coal used, equal duty.	Efficiency.
Pocahontas.....	Tons. 79.1	Per cent. 100
Bering River.....	184.7	42.83

Conclusions to be drawn from this test:

1. Full speed can not be maintained with Bering River coal. A speed of 19.56 knots was all the ship's force could make on this trial with this coal. This represents only half the power necessary to drive the ship at full speed.

2. The quantity of ash and clinker produced by Bering River coal and the necessity of constant clinkering of fires throws such exhausting work upon the personnel as to make impossible moderate speed except for a short period.

3. Bering River coal is far superior to Pocahontas in smokeless qualities.

4. Although the firing appears to have been better with Pocahontas coal than with Bering River, the discrepancies in coal consumptions are so great that it can not be expected that Bering River coal can compare in efficiency with Pocahontas.

Conclusion.—Bering River run-of-mine coal is unsuitable for use with forced draft in naval boilers.

24-HOUR, THREE-FOURTHS BOILER POWER, 15-KNOT TESTS.

With Pocahontas coal.—This run was made from 6 p. m., May 12, 1913, to 6 p. m., May 13, 1913. Boilers 1-10 were in use, under natural draft. Fires were carried from 7 to 8 inches thick. One grate bar was renewed. Loss of coal through grates, negligible. There was no noticeable effect on boilers or uptakes.

With Bering River coal.—This run was made from 12 midnight to 12 noon, August 27, 1913. Due to the large expenditure of coal, this run was shortened to 12 hours. Boilers 1-14 were tried, but it was found that they could not make enough steam to maintain a speed of 15 knots; so two more boilers—all boilers—were added. Fires were carried from 5 to 8 inches thick with natural draft, and 8 to 10 inches with forced draft, it being necessary to run some of the blowers. At the beginning of the run the loss through the grate bars was estimated at 40 per cent, as the coal was very slack. Later, the loss became very low. Two grate bars were renewed. After the run there was no noticeable effect on the uptakes and stacks, though the temperatures were higher in general than with Pocahontas coal. There was an accumulation of soot and fine ash all through the tubes, and the boilers were found to be dirty. Nine anchor clamps, 4-inch tubes to casing, were burned off, one baffle door was warped, and one cast-iron block between center 4-inch tubes was burned. There was no sagging or bulging of tubes, and no warping or displacement of flame plates.

The fires clinkered badly and great quantities of ash were produced. The clinkers were very easily broken, but it was necessary to remove them almost continually from the fires.

The comparative data of these trials, reconciled for the same length of time, are set forth in the following table:

Kind of coal.	Poca- hontas.	Bering River.
Average speed, in knots.....	15.10	14.66
Coal used, tons.....	78.58	160.30
Revolutions per minute.....	86.2	82.9
Per cent ash and clinker, dry.....	7.6	35
Per cent clinker in ash.....	23.1	10.9
Smoke density, Ringelmann.....	1.25	.6
Average CO ₂	7.8	4.4
Average temperature, uptakes.....	347	425
Coal, cubic feet per ton.....	42.23	39.83

Reconciled for equal duty, the results are as follows:

Kind of coal.	Coal used, equal duty, 15.1 knots.	Per cent efficiency.	Knots per ton at 15.1 knots.	Cruising ra- dius, 15.1 knots.
Pocahontas.....	76.58	100	2.37	4,956.8
Bering River.....	173.3	44.2	1.05	2,317.3

In anticipation of making the tests much earlier, the run with Pocahontas was made three months earlier than with Bering River coal, which would tend to make the result with the latter less favorable in point of speed and indicated horsepower than it should have been, due to the longer time out of dock. The indicated horsepower of the main engines reported with Pocahontas was 7,083, and that with Bering River, 7,600, but investigation of the data shows that the latter figure was the indicated horsepower for the nine last hours of the test, during which the revolutions per minute averaged 85. During the three first hours the revolutions varied from 71.3 to 83.1, and it is probable that the average indicated horsepower for the 12 hours did not exceed 7,350. Under identical conditions, there would, therefore, be necessary a slight correction for Bering River, which would not make any material difference in the figures above recorded.

Conclusions to be drawn from this test:

1. The percentage of ash and clinked in Bering River run-of-mine is excessive, thereby throwing exhausting work upon the personnel.

2. More boiler power, and to a certain extent forced draft, had to be used with Bering River coal for equal duty. Although the firing appears to have been better in the Pocahontas test than in the Bering River, the discrepancy in coal consumption is too great to allow a hope for results with Bering River coal that may in any way compare favorable with those attained with Pocahontas.

3. Bering River coal is superior to Pocahontas in smokeless qualities.

4. The number of miles that can be steamed with Bering River on one bunkering is much smaller than can be accomplished with Pocahontas—approximately one-half. That is to say, with Pocahontas coal the *Maryland* could steam from San Francisco to Yokohama direct and arrive with approximately 300 tons in her bunkers, while with Bering River she could steam only as far as Honolulu and arrive with the same amount in her bunkers.

Conclusion.—Bering River run-of-mine coal is inferior to Pocahontas.

Forty-eight hour 10-knot test.—In view of the unexpectedly large coal consumptions with Bering River coal during the other tests, no coal was available for this test. The absence of these data is not felt, however, in view of the data furnished during the other trials.

Final conclusion from the foregoing tests.—Bering River run-of-mine coal is unsuitable for naval use.

In order to test accurately the suitability of screened and washed Bering River coal, the coal to be tested at the Engineering Experiment Station, United States Naval Academy, Annapolis, Md., was screened and washed to represent the best grade that can be expected from the Bering River fields. The results of this test are noted in the next report.

DECEMBER 20, 1913.

To: Bureau of Steam Engineering.

Subject: Comparative evaporative test of Pocahontas and Bering River (Alaska) coal. Preliminary report.

Reference: (a) Bu.S.E. letter 103463-623-15-F of August 12, 1913.

1. The comparative evaporative tests ordered by the bureau as per above reference were begun December 10, 1913, and completed December 18, 1913. The Pocahontas coal from Pocahontas No. 1 mine, Tazewell County, Va., was tested first, followed by a test under similar conditions of screened, washed coal from a lot of 50 tons of fuel from the Bering River field.

2. The general test conditions were:

Type of boiler.....	B. & W. marine.
Number of furnace doors.....	8
Heating surface.....	square feet... 2,161
Grate surface.....	do... 58½
Steam pressure, pounds.....	gauge... 300
Draft at base of stack.....	inches of water... .75
Feed temperature.....	degrees... 180
Firing interval for one door.....	minutes... 5
Duration of test.....	hours... 24
Cleaning interval for one furnace.....	do... 12

3. Water fed to boiler was weighed from two tanks on calibrated scales into a feed tank from which the main feed pump took its suction. All other pumps were blanked on both suction and discharge. Hourly weights of water fed were corrected for difference of level in feed tank as shown by float. Coal was weighed in barrows containing a net of about 270 pounds. The coal remaining on the firing floor at the end of each hour was weighed back to get hourly coal consumption.

4. The approximate results of the test subject to slight correction for variations from standard, calibration of instruments, and corrections to unchecked data are:

	Pocahontas.	Bering River.
Total water evaporated.....pounds..	324,643	242,787
Total coal consumed.....do...	34,732	27,358
Average water per hour.....do...	13,528	10,116
Average coal per hour.....do...	1,447	1,139
Water actually evaporated per pound of coal as fired.....do...	9.34	8.83
Boiler horsepower developed.....	428	317
Builder's rating.....	216	216
Per cent of rating attained.....	196	147

5. The Pocahontas coal is run-of-mine as received, and the Bering River coal is a mixture of hand-picked lump over seven-eighths-inch screen, washed out through seven-eighths inch and over one-half inch and washed pea through one-half inch and over 4 mesh. Slack and rice sizes 4 to 10 mesh were discarded, so that the fuel fired represents less than 50 per cent of original run-of-mine and has an ash content of about 6.8 per cent. The Bering River coal has a luster and hardness closely resembling that of anthracite, does not break up rapidly, but shows a bright fracture when broken. The waste material is in the form of a carbonaceous shale of high specific gravity varying in appearance from the good coal in luster and shape of particle. The shale is a hard material which does not have as brilliant a luster as the coal and exists in the shape of flat lenticular fragments, whereas the good coal is irregular in size and shape.

6. The Pocahontas coal is characteristic of that field, dull, friable, containing in the run-of-mine about 35 per cent lump larger than seven-eighths inch. It burns readily with little clinker and clean ash, yielding with an 8-inch fire-stack gases with 13 per cent CO, and 0.4 per cent CO. The clinker is readily broken up and does not adhere to the grate bars, so that no difficulty was encountered in maintaining full boiler pressure and obtaining the average rate of evaporation, even during the period when the fires were burning down preliminary to cleaning. The minimum evaporation for any one hour was 12,063 pounds of water, whereas the maximum was 14,752 pounds.

7. The Bering River coal when first fired on a clean grate burns with a fierce fire and produces a high evaporation. Gradually, however, a dense clinker forms, which fuses to the grate and fills the spaces between grate bars, preventing the entrance of sufficient air for combustion. During the first hour the evaporation was 14,872 pounds of water, and 1,814 pounds of coal were burned. In three hours the water evaporated had fallen to 10,731 pounds and coal consumption was 1,263. From that time, although the greatest care was taken to attempt to break up this clinker by slicing through the fire door and driving a sharpened pricker bar between the grate bars from the ash pit below, the evaporation remained low. The minimum rate was 7,114 pounds per hour and the maximum 11,113, the corresponding coal consumption being 660 pounds

and 1,159 ponnds. During cleaning periods the steam pressure falls to 190 to 200 pounds, although during that time no steam is bled to the condenser and the boiler is making only the steam required for auxillaries and station turbo-electric unit on lighting load.

8. Following a cleaning period the ash pit below the grate cleaned remains bright for about 20 minutes, during which time the ashes formed drop through. Thereafter as the clinker again fuses in a mass all over the grate, the ash is retained in the furnace until the next cleaning. Had it not been for the fairly high evaporation during the first three hours when all furnaces were bright and clean the hourly water evaporated would have been less than 10,000 pounds. No coke is formed during combustion, each lump appearing to burn as a unit instead of uniting with adjacent ones to form a coke mass after distillation of gases. Flue-gas analyses with a 7-inch fire shows 11 per cent CO₂ and 0.2 per cent CO. Smoke is lighter than with Pocahontas coal, due in part to much lower rate of driving. Weather conditions during both tests were ideal.

9. This coal is not considered suitable for use in naval vessels.

Representative tests of Pocahontas coal used during these tests follow :

	24-hour test.	4-hour test.
Moisture, as received.....	2.5	2.3
Volatile matter.....	19.1	17.9
Fixed carbon.....	74.6	73.7
Ash.....	6.3	8.4
Sulphur.....	.7	.54
B. t. u.....	14,630	14,330

Samples of Bering River coal taken while loading at Controller Bay gave after drying:

	No. 1.	No. 2.
Volatile matter.....	17.7	16.7
Fixed carbon.....	61.9	59.9
Ash.....	20.4	23.4
Sulphur.....	.65	.60
B. t. u.....	12,180	11,740

After cleaning and drying at Mare Island the coal showed the following analysis for the different grades:

	Lump.	Nut.	Pea.	Slack.
Moisture.....	0.40	0.83	0.50	0.90
Volatile matter.....	17.25	17.50	16.65	15.62
Fixed carbon.....	79.16	79.44	73.07	55.82
Ash.....	3.00	2.33	9.78	27.66
Sulphur.....		.72		

The following analyses of Bering River coal were made at the experiment station:

	Hand picked.	Screening through No. 4 mesh.	As received.
Moisture.....	0.44	0.90	1.6
Volatile matter.....	18.47	15.64	17.1
Fixed carbon.....	75.51	65.86	68.5
Ash.....	5.58	17.60	14.4
Sulphur.....	.68	.69	.75
B. t. u.....	11,659	12,589	13,270

Mr. ROBERTS. Were the tests made with run-of-mine coal?

Admiral GRIFFIN. The tests at Annapolis were made with selected coal. That indicates a very good steaming coal.

Mr. BUTLER. That is very high?

Admiral GRIFFIN. Yes, sir.

Mr. BATHRICK. Have you had large experience in buying coal?

Admiral GRIFFIN. Not so much in buying as in using coal.

Mr. BATHRICK. In your experience have you come to look upon an analysis as an indication of the best coal?

Admiral GRIFFIN. None whatever, except as a guide to the class of coal the sample belongs to. For several years one of the departments of the Government has been trying to force on the Navy Department the purchase of coal on a specification basis, but we have always opposed it because we do not regard an analysis as any indication whatever of what may be expected of the coal when it is used. Our specification is a coal that will give good results aboard ship. When we come across a coal that promises good results we test it on shore, and if those tests indicate that the coal possesses qualities that would make it a good steaming coal for us, we buy enough of that coal to test it on one or two ships. If the service test parallels the test on shore, we admit that coal to competition. We have recently gone through that with a certain Pennsylvania coal that had been brought to the attention of the department.

The people who control the mine applied to us some months ago for a test to determine whether the coal was suitable for our purposes. We made the test at Annapolis, and the result was satisfactory enough to warrant ordering a test on board ship, which will be made shortly.

Mr. BATHRICK. Before you get to the absolute tests, you were speaking of a coal that promises to be good. How do you determine the promise, by the analysis?

Admiral GRIFFIN. Largely so.

Mr. BATHRICK. You take the analysis as an indication that the coal promises to be good?

Admiral GRIFFIN. Yes, sir.

Mr. BATHRICK. But you do not rely upon it until the coal has been actually tested?

Admiral GRIFFIN. We do not.

Mr. WILLIAMS. What is the total annual cost of the coal used in the Navy?

The CHAIRMAN. That is set forth fully in the report and the evidence of the Paymaster General.

Admiral, you were speaking of testing some of the coals from the Pennsylvania fields?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. The matter has been called to my attention that the claim is made that the Alabama coals in the Birmingham district and adjacent districts are fully as good coals as the West Virginia coal, and that they can be delivered on board ship at Pensacola or at Savannah at a substantial reduction in cost. Have any tests been made of the Alabama coals?

Admiral GRIFFIN. A number of tests have been made on board vessels of the Navy from time to time. I do not know of any test made within the past two or three years, but we have on several occasions tested it, and I think about three years ago some of our torpedo boats took on coal at Pensacola from one of the Alabama mines—the mine you refer to. These destroyers were to run from Pensacola to Key West at a speed of 25 knots, which they were easily capable of doing because they were 28 or 29 knot boats, but they could not keep up the 25 knots with the Alabama coal. In addition to the coal not being the equal in steaming properties to the coals we are using, it makes a very dense black smoke, which is, of course, very objectionable. By the way, I should have mentioned in regard to the Bering River coal that that is one point in which it showed a marked superiority to the Pocahontas coal.

Mr. BUTLER. The absence of smoke?

Admiral GRIFFIN. Very little smoke, and what there was was easily dissipated, which would go to indicate that the quality of the coal is rather anthracite than bituminous.

Mr. WITHERSPOON. That would be a great advantage in battle?

Admiral GRIFFIN. That would be a great advantage not so much in battle as in the operations that precede a battle. It would be an advantage in battle as well, but not to the extent that it would be before actual conflict.

Mr. WITHERSPOON. In regard to what you have said about the Alabama coal, there is an immense region of coal in Alabama and they have there different kinds of coal. I use it myself and I know that there is the greatest difference between the coals that come from different mines in Alabama. Has there ever been any sufficient test and investigation to find out whether any of the Alabama coals would be suitable or not?

Admiral GRIFFIN. That I do not know. The only coals that we know of, of course, are those used by our ships. Quite recently, within a month, a gentleman who represented Alabama coal called to see me to have a test made, and I told him that we were perfectly willing to test it out as we did other coal, and that if he would supply us with a carload of the coal for the experiment station at Annapolis we would make the test of it under the same conditions as we did the Pennsylvania coal, and that if it showed up well in that test it would be considered.

Mr. WITHERSPOON. Do you remember, Admiral, whether among the Alabama coals you have tested there was included what is called the Montevallo coal?

Admiral GRIFFIN. I do not remember that name. The Pratt mine is the one I had in mind.

Mr. WITHERSPOON. The Montevallo coal has less clinkers in it than any coal I have ever seen; absolutely none; it all goes to ashes.

Admiral GRIFFIN. I do not recall that name. I think most of the coal that we use has been from the Pratt mine.

Mr. FARR. Do you use any anthracite coal?

Admiral GRIFFIN. No, sir; none at all.

The CHAIRMAN. In speaking about your laboratory analyses, I got the impression that in your comparisons of the four Virginia and

West Virginia coals you said that the Pocahontas coal showed a fine laboratory analysis and that the actual result from it compared favorably with the analysis, and, if I remember, that the New River coal did not show a good laboratory analysis, but did show a good practical result. Am I correct?

Admiral GRIFFIN. Not quite. It was not the New River coal; it was another coal.

The CHAIRMAN. Then I got the name wrong.

Admiral GRIFFIN. Each of them showed a good analysis, but the Pocahontas coal showed very much better. It indicated that you could get very much better results.

The CHAIRMAN. But, as a matter of fact, you got comparatively as good results from the other coal as you did from the Pocahontas coal?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. There was no fixed analogy or comparison between the laboratory analyses and the actual results?

Admiral GRIFFIN. Exactly.

The CHAIRMAN. The same thing occurred in connection with the Bering River coal; you had a good laboratory analysis, but you do not get good practical results?

Admiral GRIFFIN. Yes, sir. You can not absolutely predicate anything from the analysis.

Mr. WITHERSPOON. Admiral, suppose that the Government were to build a railroad up through Alaska, where this coal could be transported to the coast with very little expense, and you were to use it on the ships in time of peace, which would be the less costly, to use that coal or to buy the eastern coal and pay \$8 or \$9 a ton for the coal and transportation across the continent?

Admiral GRIFFIN. I do not know what it would cost. How much is this coal going to cost you?

Mr. WITHERSPOON. I just suppose that the Government will build a railroad so it can bring the coal down to the coast on its own railroad without cost, and therefore the cost of it would be just the mining.

The CHAIRMAN. There would be the cost of operating the railroad.

Mr. WITHERSPOON. No, sir. If you operate the railroad any way it would not add anything to the cost of operation to bring the road down.

Mr. ROBERTS. You would have to have certain apparatus.

Mr. WITHERSPOON. Let the Admiral answer the question.

Admiral GRIFFIN. I should say that, if coal equal to the best grade tested could be delivered at San Francisco, say, at 75 per cent of the cost of eastern coal, and if you could insure a supply of eastern coal being on hand when needed for war purposes, the Bering River coal might be used in time of peace, provided our ships would never be required to run at anything like full speed, but I think it would introduce a very exasperating condition on board ship.

Mr. WITHERSPOON. On account of the clinkers?

Admiral GRIFFIN. On account of its inferior steam-making qualities, the heavy clinkers, and the labor which would be imposed on the firemen.

Mr. BUCHANAN. And what would be the result on the grates?

Admiral GRIFFIN. The grates would go very rapidly with the heavy clinkers.

The CHAIRMAN. We have discussed very fully the Bering River coal. We made an appropriation a year ago of \$75,000 for the development and exploration of the Matanuska field, which is quite a distance from the Bering River field?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. Please give us a full statement as to the result and the present status of that experiment.

Mr. BUCHANAN. Where is that?

The CHAIRMAN. That is also in Alaska—in a different part of Alaska.

Admiral GRIFFIN. When it was decided to start mining in the Matanuska field it was also decided that there should be no divided responsibility in the matter between the Bureau of Mines and the Navy Department, and therefore the entire operation of mining and transporting the coal was placed under the direction of the Bureau of Mines, and an allotment of money from this appropriation of \$75,000 made to the disbursing officer of the expedition as required.

They started operations last July and have now taken out about 900 tons. Just before the close of navigation they got up a party for transporting the coal. This party is now in the Matanuska field and expects to transport the coal this winter and spring to tidewater at a point within 15 miles of the anchorage for large vessels—to a place called Knik. The total distance it has to be transported is 60 miles, and they expect if the ice conditions are good on the river to have that coal at Knik in time for the *Maryland*, or another vessel, to take it next summer, though they are by no means certain that they will be able to transport it over the ice. I believe they can not depend on having ice trails of sufficient smoothness all the winter through. If not, they will have to transport it over a land trail, which will increase the time and also the cost of the work.

The CHAIRMAN. In that distance, you are not following the line of the railroad at all?

Admiral GRIFFIN. No, sir.

The CHAIRMAN. But going across the country?

Admiral GRIFFIN. Yes, sir; to the nearest tidewater.

Mr. BATHRICK. Has the Matanuska coal been analyzed?

Admiral GRIFFIN. Yes, sir.

Mr. BATHRICK. How does that coal compare?

Admiral GRIFFIN. I have not the analysis, but I could get it from the Bureau of Mines.

The CHAIRMAN. Admiral, will you please procure from the Bureau of Mines a report of the various analyses that they may have made, or a number of them, and insert them in the records?

Admiral GRIFFIN. Yes, sir.

(The statement referred to is as follows:)

ANALYSES OF COAL MINED BY THE NAVY COAL EXPEDITION IN THE MATANUSKA FIELD, ALASKA, DURING THE SUMMER AND AUTUMN OF 1913.

Coal mined at tunnel B, Chickaloon, Matanuska field, Alaska.

[Coal screened but not washed.]

Laboratory No.	Date.	Number of tons represented by sample.	Analysis of coal "as received."					
			Moisture.	Volatile matter.	Fixed carbon.	Ash.	Sulphur.	B. t. u.
	1913.							
18043.....	Sept. 18	12 1	1.25	21 50	70.09	7.16	0.45	14,323
18039.....	Sept. 20	18.0	1.28	20 85	70.29	7.58	.49	14,222
18037.....	Sept. 25	29.0	0.84	21.39	70.47	7.30	.49	
18044.....	Sept. 27	34.1	1.70	20 86	69.30	8.14	.46	14,132
18042.....	Sept. 29	27.1	2.21	20 75	68.93	8.11	.43	14,002
18045.....	Sept. 30	23 0	2.03	21.19	68.78	8.00	.43	14,069
18145.....	Oct. 1	25.7	1.85	20 35	69.48	8.32	.46	14,008
18149.....	Oct. 2	24.3	2.18	20.36	68.40	9.04	.46	13,846
18152.....	Oct. 3	26.6	1.93	20 07	69 86	8 14	.46	14,018
18154.....	Oct. 4	23.0	1.72	20 73	68.77	8.78	.45	13,960
Average.....			1.70	20.81	69.43	8.06	.46	14,063

Coal mined from Bed D, Tunnel No. 4, Chickaloon, Matanuska Field, Alaska.

[Coal screened but not washed.]

Postma. laboratory number.	Date.	Number of tons represented by sample.	Analysis of coal "as received."			
			Moisture.	Volatile matter.	Fixed carbon.	Ash.
1913.						
18A.....	Aug. 21	7.7	1.48	19.60	68.31	10.61
20A.....	Aug. 22	18.6	1.29	20.14	68.55	10.02
23A.....	Aug. 23	15.2	1.59	19.58	68.10	10.73
24A.....	Aug. 25	.4	1.89	20.00	72.79	5.32
25A.....	Aug. 26	1.3				
26A.....	Aug. 27	17.9	2.06	19.54	68.06	10.34
28A.....	Aug. 29	8.3	2.47	19.28	67.40	10.85
30A.....	Aug. 30	20.7	1.15	19.43	69.32	10.10
32A.....	Sept. 1	2.4	1.16	19.32	68.62	10.90
37A.....	Sept. 2	8.3				
	Sept. 4	16.5	1.27	19.33	70.03	9.37
41A.....	Sept. 5	3.4	1.03	19.62	69.57	9.78
	Sept. 6	8.0				
	Sept. 8	6.2				
	Sept. 9	8.7				
50A.....	Sept. 10	10.2	1.21	19.94	68.50	10.35
51A.....	Sept. 12	11.3	1.42	20.06	67.51	11.01
	Sept. 15	18.0				
67A.....	Sept. 16	1.7				
	Sept. 17	5.6				
68A.....	Sept. 18	6.5				
Average.....			1.50	19.65	68.90	10.41

Coal mined from No. 8 bed, tunnel No. B, Chickaloon, Matanuska field, Alaska.

[Coal screened but not washed. Analysis of coal "as received."]

Postma. laboratory No.	Date.	Number of tons represented by sample.	Moisture.	Volatile matter.	Fixed carbon.	Ash.
	1913					
35A.....	Sept. 2	5.7	0.95	20.53	71.60	6.92
40A.....	Sept. 3	4.0				
40A.....	Sept. 5	12.6	.89	20.57	72.40	6.14
43A.....	Sept. 6	5.9	.72	20.49	72.60	6.19
	Sept. 9	7.5				
	Sept. 10	3.5	.91	20.49	72.60	6.00
55A.....	Sept. 12	9.9				
	Sept. 13	18.3				
66A.....	Sept. 16	14.5				
	Sept. 17	12.9				8.11
65A.....	Sept. 18	12.1				6.99
77A.....	Sept. 19	25.7				7.47
78A.....	Sept. 20	18.0				6.93
79A.....	Sept. 22	18.9				6.88
83A.....	Sept. 23	24.1				7.01
85A.....	Sept. 24	25.2				6.41
87A.....	Sept. 25	29.0				7.43
91A.....	Sept. 26	31.6				7.50
94A.....	Sept. 27	34.1				8.07
95A.....	Sept. 29	27.1				8.14
97A.....	Sept. 30	23.0				7.80
98A.....	Oct. 1	25.7				8.18
99A.....	Oct. 2	24.3				8.84
100A.....	Oct. 3	26.6				8.32
Average.....			.87	20.52	72.30	7.33

Mr. BUTLER. What is the distance from the coast up to where this mine is located?

The CHAIRMAN. By rail?

Mr. BUTLER. If we should construct the railroad.

The CHAIRMAN. The present railroad is completed for about 70 miles.

Mr. BUTLER. To the last mine that the admiral speaks of?

The CHAIRMAN. In the Matanuska field. From Resurrection Bay is up now about 70 miles, and there are something like 60 or 70 miles yet to be built in order to reach the Matanuska field, making something like 140 miles.

Mr. ROBERTS. As to the samples of coal obtained from the Bering River and Matanuska fields, were they taken from mines already opened or were they mines that were started?

Admiral GRIFFIN. I think they were new openings, but I am not positive of that.

Mr. ROBERTS. My impression is that we had some testimony from the gentlemen who appeared before us last year that they went into mines already opened and took out the samples. I would like to have that determined definitely if you can do it.

Admiral GRIFFIN. Yes, sir. [The larger portion of the coal was taken from a new tunnel; the other portion from one of the Cunningham tunnels. A small amount was taken from two other new openings.]

Mr. STEPHENS. What is your recollection about the analysis of the coal taken from the field you have just spoken of; was it better or worse than the coal from the Bering River field?

Admiral GRIFFIN. My impression is they are very much the same, that there is very little difference in the analyses.

The CHAIRMAN. No actual tests have been made yet?

Admiral GRIFFIN. None at all.

The CHAIRMAN. No actual tests at burning?

Admiral GRIFFIN. No, sir.

Mr. WILLIAMS. Have the tests been sufficient to demonstrate with certainty either the extent of the field or the character of the coal which may be developed?

Admiral GRIFFIN. I really do not know. I should think that the Bureau of Mines would be the only people who could tell you definitely about the field.

Mr. ROBERTS. As the result of the experiments and tests made thus far with the Bering River coal, would you recommend its use for naval purposes under existing conditions?

Admiral GRIFFIN. Not on the basis of those tests; I would not.

Mr. ROBERTS. Do you think that sufficient tests have been made to make your opinion irrevocable on that?

Admiral GRIFFIN. No. I should be very glad to see further tests made, especially as some of the people, some of the miners and people interested in the Alaskan coals generally, insist that we did not get the best coal or representative coal. I think that they have gone that far.

Mr. STEPHENS. Have you knowledge of any or many analyses being made by private companies?

Admiral GRIFFIN. No, sir; I have not. I know that the Cunningham people have made a good many, but I am not familiar with them. Mr. Storrs, in his report to the Guggenheim-Morgan people, quotes quite a few analyses.

Mr. WITHERSPOON. The test of two coals in a great coal region could not possibly be any test as to whether there was any better coal there?

Admiral GRIFFIN. No, sir. You would have to get the coal out and see.

The CHAIRMAN. The coal taken from the Bering River field and brought down was taken from a number of openings?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. It was not all taken from the same opening?

Admiral GRIFFIN. In all, four tunnels were opened. The major portion came from two openings.

Mr. WITHERSPOON. All of this coal came out of the same vein?

Admiral GRIFFIN. That is my understanding. In the same section of the field—outcroppings on different levels. They did try a number of places that were indicated by the Bureau of Mines or the Geological Survey, I do not know which.

Mr. BATHRICK. Did they do the same thing in the Matanuska field—take the coal out of one opening?

Admiral GRIFFIN. I am not positive, but I think so.

Mr. FARR. Admiral, is it the cost alone of anthracite coal that prohibits its use in the Navy?

Admiral GRIFFIN. No. It is the ease with which you can get steam with the other coal and the ease of firing it as compared with anthracite.

Mr. FARR. Has there been any time in recent years when you have used the smaller sizes of anthracite?

Admiral GRIFFIN. Only in some of the smaller yachts where we wanted to avoid smoke; but for very many years, certainly for 25 years, we have not used anything except the semibituminous for cruising ships.

Mr. KELLEY. Are any further tests proposed of the Bering River district coal?

Admiral GRIFFIN. Not of the Bering River coal; the appropriation for that is exhausted.

Mr. ROBERTS. It was testified before the committee last year that the naval specifications a year ago called for 40 per cent lump coal.

Admiral GRIFFIN. I do not know just what it is.

Mr. ROBERTS. That was the testimony.

Admiral GRIFFIN. I thought it was 30 per cent.

Mr. ROBERTS. Lieut. Commander Boyd of the Navy so testified.

Admiral GRIFFIN. Probably he had the specifications.

Mr. ROBERTS. Are you able to tell us whether there was 40 per cent lump in the samples you secured from the Bering River field?

Admiral GRIFFIN. You mean in the run of mine?

Mr. ROBERTS. As it came out.

Admiral GRIFFIN. I doubt if there was as much as that, but I will try to ascertain and put it in the hearing. [Lump larger than seven-eighths inch, 43.74 per cent.]

Mr. BATHRICK. In your actual test of the coal from the Bering River field, did you use the run of mine or screen it?

Admiral GRIFFIN. We used the lump, slack, run of mine, and pea size. In four different ways we tried to get the very best we could out of it, and the best lump gave us 79 per cent or a little short of 80 per cent.

Mr. STEPHENS. All of that coal was from the same vein?

Admiral GRIFFIN. Yes, sir; that is my understanding. At least, from the same section of the field.

Mr. ROBERTS. The so-called Cunningham mines are in the Bering River district?

Admiral GRIFFIN. They have claims in the Bering River district; yes, sir.

Mr. ROBERTS. Commander Boyd testified before the committee as follows:

Mr. ROBERTS. In how many tunnels or mines did you carry on the underground surveys?

Mr. BOYD. Four tunnels.

Mr. ROBERTS. Those are all within the Cunningham area?

Mr. BOYD. Yes; all in the so-called Trout Creek district.

Mr. ROBERTS. Are those mines opened?

Mr. BOYD. Yes.

Mr. ROBERTS. What I want to get at is whether you opened up mines or there were already mines there?

Mr. BOYD. There were no mines there. They were prospect pits or tunnels.

Mr. ROBERTS. And you went into those prospect pits?

Mr. BOYD. Went into everything—prospect pits and tunnels.

Admiral GRIFFIN. He probably was more familiar with the mining part than I am. It was my impression that the coal was all taken out of one opening.

Mr. ROBERTS. My understanding is that the Bering River coal which was taken out came from the Cunningham field and really from the Cunningham mine or pits or tunnels, whatever the Cun-

ingham people had done in the way of developing. The Cunningham claims were supposed to be the best coal in that region.

Admiral GRIFFIN. It is $4\frac{1}{2}$ miles from the camp to the Cunningham site. The mines were in the Tenino claim—one of the Cunningham group.

Mr. KELLEY. Considering the immense areas, would you consider the examination you have made a sufficient examination to determine whether or not this Bering River coal could be used?

Admiral GRIFFIN. We should have to be guided in that by the Bureau of Mines. We are not supposed to know anything about the mining and geology of the country and we would take what they tell us is the best prospect up there.

Mr. KELLEY. They could not tell by a mere analysis?

Admiral GRIFFIN. No, sir; but they explored a number of sections and located what they considered the very best.

Mr. WITHERSPOON. This coal which your tests showed was inefficient was the best they found up there?

Admiral GRIFFIN. In the Bering River district; yes, sir.

Mr. ROBERTS. Mr. Hobson asked Commander Boyd about the quantity of coal and he answered: "The geologists estimate in the Trout Creek district was, from the preliminary investigation, that there would be 6,000,000 tons there available for the use of the Navy—that is, coal of a character which the geologists considered would be suitable for the Navy. That, of course, is not a large amount. The Trout Creek district is, however, only a part of the field."

The CHAIRMAN. If we have finished the coal matter, gentlemen, I will ask the Admiral if he has any other matter which he wishes to present to the committee?

Admiral GRIFFIN. I would like to add to what was said on the subject of oil yesterday, that a supply of oil is absolutely necessary for us and is becoming more and more necessary every year, because all the vessels we are now building are exclusively oil burners. The coal burners are being put in reserve. This last year we put five coal-burning destroyers in reserve, and next year we will get two oil-burning battleships. They will be our first oil-burning ships, and will replace two coal-burning ships. Henceforth, all ships added to the fleet will be oil burners.

The CHAIRMAN. You mean exclusively oil?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. We have several which burn oil and coal in combination?

Admiral GRIFFIN. Yes, sir.

Mr. WITHERSPOON. Do you mean the *New York* and *Texas*?

Admiral GRIFFIN. No, sir; they are coal burners. The *Oklahoma* and *Nevada*, they are exclusively oil burners. All the ships we build will be oil burners, and unless we are sure of a cheaper supply of oil our fuel bills are going to mount up very rapidly. I understand that the Land Office has no funds sufficient to investigate all the claims and patents for oil lands within the confines of the naval petroleum reservation, and, of course, that handicaps us in making any move whatever to get oil of our own from these reserves. I merely wish to let you know the situation so that you will under-

stand that the fuel bills are going to mount very rapidly unless we can get cheaper oil.

Yesterday, in answer to a question by Mr. Roberts, I think, I said that under the most unfavorable conditions of producing oil we would get our oil for practically nothing. Well, I misread the table I had here. Under the most unfavorable conditions it would cost us 43 cents a barrel. We are now paying \$1.39. Of course, that is an estimate, but in that we have endeavored to make every possible allowance.

Mr. BATHRICK. Have you investigated the possibility of the Government controlling oil lands?

Admiral GRIFFIN. To an extent; yes, sir.

Mr. BATHRICK. If this pertains to the question of procuring oil lands, we gave to the railroads of this country something like 158,000,000 acres in primary and indemnity tracts. The indemnity tracts included lands given after the railroads had shown that the primary tracts ran into Government reservations, and therefore they could not select from the Government reservations. A great portion of the indemnity tracts has never been returned to the Government. Is that the question?

Admiral GRIFFIN. I think that is in litigation.

Mr. BATHRICK. Is that what you refer to as being in the Land Office?

Admiral GRIFFIN. That is only a part of it.

Mr. BATHRICK. Is also the question involved as to whether or not certain oil wells are now on the indemnity tracts and it is uncertain whether it belongs to the Government?

Admiral GRIFFIN. I think that applies to some of the California land, and also the question as to whether the lands which have been set aside as a naval reserve in California can properly be set aside; in other words, the railroads and others claim that they belong to them, and that the President had no authority to withdraw the lands from entry.

Mr. BATHRICK. There are oil producers on that tract?

Admiral GRIFFIN. On a portion of it only.

Mr. BATHRICK. But it is adjacent to a big oil field?

Admiral GRIFFIN. Yes, sir. It is a portion of the Midway fields.

Mr. BATHRICK. What you mean to convey to us is that the Land Office has not funds to prosecute the Government claims?

Admiral GRIFFIN. That is practically it; yes, sir. They have not money to investigate all these claims and patents.

Mr. BATHRICK. Have any of the officers of the Navy gone before the committee and explained this matter?

Admiral GRIFFIN. Before the Naval Committee?

Mr. BATHRICK. Before the committee of the House dealing with the appropriations for the Land Department.

Admiral GRIFFIN. No, sir. We have left the matter to the Interior Department.

Mr. ROBERTS. I would like to ask the admiral if the subject of peat as a fuel has been called to the attention of the Navy Department?

Admiral GRIFFIN. It has not, to my knowledge.

Mr. ROBERTS. The reason I made the inquiry, quite by accident some time ago I met a person who is interested in making what they

call briquets, cylinders of fuel from peat, and it was represented to me that the analysis shows very high thermal heat units, equal to the best coal, with practically no ash and no impurities, and it was claimed that they could be produced and marketed to the retailer at less than \$4 a ton. It strikes me that there might be a point well worthy of investigation by the Navy; that is, if these briquets could be used under the boilers.

Mr. BATHRICK. You would have to build the ships five times as large.

Mr. ROBERTS. No; you are wrong about that. You can get more of the briquets in the same space than any other kind of fuel, because they are compressed very hard.

Mr. WITHERSPOON. Admiral, as I understand, you have 35 battleships constructed to use coal and four, including those authorized by law, to use oil exclusively?

Admiral GRIFFIN. Yes, sir.

Mr. WITHERSPOON. Would you consider it advisable to go to the extent of developing oil wells to supply four battleships?

Admiral GRIFFIN. Not for those four ships; no, sir.

Mr. WITHERSPOON. That would be on the assumption that we are going to have more battleships?

Admiral GRIFFIN. An oil-burning fleet; yes, sir.

Mr. WITHERSPOON. Do you base it on the assumption that the 35 battleships that are now constructed to use coal will be changed so that they will use oil instead of coal?

Admiral GRIFFIN. No, sir.

Mr. WITHERSPOON. Then is it on the assumption that the new battleships will be sufficient in number to justify it?

Admiral GRIFFIN. Yes, sir.

Mr. WITHERSPOON. You do not think that the four we have already authorized would justify it?

Admiral GRIFFIN. They would not be sufficient; no, sir.

Mr. FARR. Has the Government any oil lands free from legal entanglements which it can now develop?

Admiral GRIFFIN. No decision has been reached in regard to the California lands which were reserved two years ago.

Mr. FARR. There is no immediate prospect?

Admiral GRIFFIN. No, sir.

Mr. FARR. In view of that fact, is it wise to build exclusively oil-burning ships?

Admiral GRIFFIN. We think that the military advantages which are to be gained by building oil-burning ships are sufficient to justify most any cost for fuel, and that the ships which burn only oil fuel have a distinct military superiority over those which burn only coal.

Mr. FARR. Have you mentioned the advantages in your previous remarks?

Admiral GRIFFIN. Some of the advantages are: Greater sustained speed, increased radius of action, absence of smoke, ease of firing, reduction in space for boilers, reduced number of men for operating.

Mr. BATHRICK. In 1887 Grover Cleveland ordered this indemnity tract handed over to the railroads to be restored, but in order to restore it an adjustment had to be made by the Interior Department upon the selections that the railroads had made. It is, in my opinion, owing to the dilatory conduct of the Department of the

Interior that this tract of land has not long ago been restored, and, further, I will state that, in my opinion, the influence of the railroads in whose possession this land is has been to a large extent exercised upon the Interior Department and other officials of this country for the purpose of preventing the restoration of this land.

Mr. ROBERTS. Will you please tell us about the gunboats being built, the *Palos* and *Monocacy*, at the Mare Island yard?

Admiral GRIFFIN. Yes, sir.

Mr. ROBERTS. You are building the engines?

Admiral GRIFFIN. The entire ships.

Mr. ROBERTS. The whole thing?

Admiral GRIFFIN. Yes, sir.

Mr. ROBERTS. How does the cost of these ships at the Mare Island Navy Yard compare with the cost in private yards?

Admiral GRIFFIN. We got only one bid for building the *Monocacy*, which was the vessel advertised, and that bid was something like \$210,000. We also invited bids from four or five navy yards, and each of these yards bid less than the private firm. The bid of the Mare Island Navy Yard was the lowest of any, \$141,789, with one kind of boilers, and \$143,123 with another kind of boilers. The only bid we got was from the Seattle Construction Co., \$212,600, an increase of practically 50 per cent over the Mare Island estimate. The matter was thrashed out very carefully here, and before a decision was reached the Seattle people reduced their bid to \$196,000. They also represented that we could not build in the navy yards for anything like the prices that the yards estimated, but the difference between their bid and the Mare Island estimate was so great that we were very certain that none of the yards could have made such a mistake in its estimate as to bring the final cost of these boats up to anything like the amount that was bid, and so it was determined to build the *Monocacy* at the Mare Island Navy Yard, which had the necessary equipment and which had submitted the lowest estimate. Subsequently the building of the sister boat *Palos* was also authorized.

Mr. STEPHENS. What was the Navy's next best bid?

Admiral GRIFFIN. \$166,213.

Mr. ROBERTS. What bid was that?

Admiral GRIFFIN. The New York yard.

Mr. STEPHENS. That was about 25 per cent higher?

Admiral GRIFFIN. About 20 per cent. In fact, between 16 and 17 per cent.

Mr. LEE. Did you have a bid from Philadelphia?

Admiral GRIFFIN. Philadelphia did not bid. Norfolk and Puget Sound were the other bidders.

Mr. STEPHENS. The completion of the *Monocacy* at the Mare Island Navy Yard has been on time and within the amount estimated?

Admiral GRIFFIN. It has been within the amount estimated.

Mr. STEPHENS. And also satisfactory?

Admiral GRIFFIN. The vessels have not been tried, but the Mare Island Navy Yard does good work, and we have every reason to believe that they will be satisfactory. The final cost, determined after practical completion, but with an estimate made on a very small amount of uncompleted work, is \$2,000 or \$3,000 within the estimate. That is, the final cost will be about two-thirds of the bid

that was made for one of these boats. There was also a bid made by the same firm to build that gunboat and deliver it at Shanghai ready for service, for \$290,000. We have shipped the boats out "knocked down," and it is estimated that their final cost will be little more than \$160,000.

Mr. STEPHENS. A saving of \$130,000?

Admiral GRIFFIN. Yes, sir; about that. Certainly \$120,000 on each gunboat.

The CHAIRMAN. In connection with this estimate, did they include indirect charges—overhead charges?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. And also the clerical and drafting expenses?

Admiral GRIFFIN. That expense could not be changed under the law. That would add about 5 per cent of the direct labor cost to those charges. It has been stated that freight is not included, and that we pay the freight out of another appropriation. That is true. Well, the Government freight rate to Mare Island is about \$20 per ton, and we would have to pay freight on about 170 tons if everything entering into the construction was shipped from the East, which would add \$3,400. You would have to add tremendously to the actual cost to come anywhere near the bid quoted.

The CHAIRMAN. And it is satisfactory?

Admiral GRIFFIN. Yes, sir; exceedingly so.

Mr. ROBERTS. Mr. Chairman, I would like to have sent up here for the use of the committee the bids that were obtained by the department for the construction of the fuel-oil and supply ships authorized last year. What I desire are the bids of the navy yards and of the private concerns itemized as to labor, material, and the cost of the hull and engines.

Admiral GRIFFIN. Yes, sir; I will supply that information.

(The statement referred to is as follows:)

SUPPLY SHIP NO. 1.

[Bids opened Dec. 20, 1913.]

Item and division.	Navy yards.						
	Boston.	Charleston.	Mare Island.	New York.	Norfolk.	Portsmouth.	Puget Sound.
Labor:							
Hull.....	\$245,179.00	\$447,661.00	\$364,625	\$534,440	\$407,640	\$422,622	\$376,173
Machinery.....	110,060.38	162,167.96	151,715	145,046	179,610	174,533	160,502
Material:							
Hull.....	295,327.00	293,987.00	337,735	309,246	277,640	323,329	304,878
Machinery.....	212,325.96	236,217.74	236,585	224,197	232,400	297,686	206,542
Indirect:							
Hull.....	135,671.00	145,363.00	153,587	170,748	159,445	117,261	167,862
Machinery.....	47,785.92	63,010.62	67,988	45,896	73,570	60,184	70,956
Total:							
Hull.....	676,177.00	887,011.00	855,947	1,014,434	844,725	863,212	848,913
Machinery.....	370,172.26	461,396.32	456,288	415,139	485,560	532,603	438,000
Total yard estimate.	1,046,349.26	1,348,407.32	1,312,235	1,429,573	1,330,305	1,395,815	1,286,913
Yard estimates for drafting:							
Bureau of Construction and Repair....	1 25,300.00	12,500.00	None.	None.	45,800	1 20,500	11,070
Bureau of Steam Engineering.....	1 7,840.00	None.	None.	None.	None.	1 15,000	12,000
Total estimates....	1 33,140.00	12,500.00	None.	None.	45,800	1 35,500	23,070

¹ Not included in total estimate submitted by yard.

TRANSPORT NO. 1.

Item and division.	Navy yards.					
	Mare Island.	New York.	Norfolk.	Portsmouth.	Puget Sound.	Philadelphia.
Labor:						
Hull.....	\$448,830	\$744,258	\$543,800	\$587,131	\$493,896	\$377,154
Machinery.....	155,228	162,594	187,015	184,640	184,281	154,210
Material:						
Hull.....	427,931	453,547	380,250	449,326	390,693	411,210
Machinery.....	259,069	241,265	261,700	329,206	218,893	210,410
Indirect:						
Hull.....	190,492	242,748	212,130	162,945	219,202	134,410
Machinery.....	70,335	50,318	76,137	63,180	81,826	41,410
Total:						
Hull.....	1,067,253	1,440,553	1,136,180	1,199,402	1,103,791	934,410
Machinery.....	484,622	454,177	524,852	577,026	485,000	414,410
Total (yard estimate)...	1,551,875	1,894,730	1,661,032	1,776,428	1,588,791	1,348,410
Yard estimates for drafting:						
Bureau of Construction and Repair.....	None.	None.	51,000	128,900	14,000	41,410
Bureau of Steam Engineering.....	None.	None.	None.	15,000	15,000	11,410
Total estimate.....	None.	None.	51,000	143,900	29,000	52,410

¹ Not included in total estimate submitted by yard.

² Includes also reporting weights, mold loft work, and inclining experiments.

[Bids opened Dec. 20, 1913.]

TRANSPORT NO. 1.

Class 1: Hull and machinery in accordance with department's plans and specifications.

Class 2: Hull and equipment per department's plans and specifications, with machinery of type proposed by bidders.

Bidder.	Class.	Time.	Speed.	P.
		<i>Months.</i>	<i>Knots.</i>	
New York Shipbuilding Co.....	1	24	14	\$1,111
Fore River Shipbuilding Co.....	1	24	14	1,111
Seattle Construction & Dry Dock Co.....	1	24	14	1,111
Newport News Shipbuilding & Dry Dock Co.....	1	24	14	1,111
Do.....	2	24	14	1,111
The Wm. Cramp & Sons Ship & Engine Building Co.....	1	24	14	1,111

SUPPLY SHIP NO. 1.

New York Shipbuilding Co.....	1	24	14	\$1,111
Fore River Shipbuilding Co.....	1	24	14	1,111
Seattle Construction & Dry Dock Co.....	1	21	14	1,111
Newport News Shipbuilding & Dry Dock Co.....	1	22	14	1,111
Do.....	2	22	14	1,111
Wm. Cramp Ship & Engine Building Co.....	1	24	14	1,111

¹ If tried at Lewes, Del.

Admiral GRIFFIN. There is one matter I should like to bring to the attention of the committee in connection with wireless station. In Admiral Stanford's hearing I noticed a proposition to transfer to the Bureau of Yards and Docks four-fifths of the money appropriated for high-power wireless stations to provide for the purchase

works features of those stations. When this appropriation was made it was made under the Bureau of Equipment, and the wireless business of the Bureau of Equipment is now administered by the Bureau of Steam Engineering. I might say that a wireless station is constructed for the purpose of carrying out wireless communication and not for any public works or constructional features that may be involved. In other words, the reason for a wireless station is to produce wireless communication, and the characteristics of that station, the number of towers, their height, their spread, and everything else must be determined by the people who have the technical knowledge necessary to undertake the wireless part of the business. The Navy regulations provide in the case of all public works, that if any bureau has public-works features involved in any work it is doing, that work must be accomplished by the Bureau of Yards and Docks, and that an allotment must be set aside for it; and that regulation is strictly adhered to. Therefore, I can see no reason whatever why this appropriation for wireless stations should be split up between two or three bureaus.

As it is now, the appropriation is being carried in the office of the Secretary of the Navy, so three offices are involved and it is not at all easy to keep track of how much is being expended. As a matter of fact, the Bureau of Steam Engineering supposed that the wireless station at Panama was going to cost \$215,000. We thought that would be the limit, but we find on getting detailed estimates from the Bureau of Yards and Docks that it is running up to practically \$250,000. I think that that entire appropriation ought to be under one bureau and that one bureau ought to be responsible for it and know what is being expended from it. If you put a certain part of that under any bureau other than the one which has the operation of it the tendency is for the bureau which has a large part of the appropriation to assume that that bureau controls the matter. Only last week I had sent to me for approval from the Bureau of Yards and Docks a plan of the wireless towers which they are to erect for us at the Washington Navy Yard. In looking it over I found that these towers were so located that the antennæ would pass over a smoke-stack. Of course, that would be absolutely out of the question. We could not consider it, and I had to ask them to change it and to put it in another place. We indicated where we wanted it to go and the matter was adjusted satisfactorily, but an occasion might arise when we might not be consulted.

In fact a case of this kind did occur last September. The Bureau of Yards and Docks sent to me a detailed plan of the ship fitters' and boiler shop at the Puget Sound Navy Yard to know if it was satisfactory, with a request for prompt action, because bids for its construction had been received and it was desired to award the contract. It was the first thing I had seen about the boiler shop. I represented to the Chief of the Bureau of Yards and Docks that the Naval Committee looked to the Bureau of Steam Engineering to see that the equipment of boiler shops in navy yards was such as would be necessary for the economical prosecution of any work under that bureau, and that therefore I had a responsibility in the matter which the Bureau of Yards and Docks could not assume; and on inquiry as to whether the plan had been approved I was informed that it

had. I asked if the Secretary of the Navy had approved it and was told that he had not, but that it had been approved by the Puget Sound Navy Yard and by the Chief of the Bureau of Yards and Docks. I represented that the shop was not satisfactory to me, but was told that a change now would seriously delay matters, and that to change it as I wanted would probably involve a good deal of expense. The boiler shop part, I may say, was a portion of the building 80 feet in width and had a row of columns right down the center of it. Now, a boiler shop 40 feet in width is not of much account. You can not do much boiler work in that sort of shop, so I demurred to approving the plan and stated in an official indorsement that this row of columns would seriously interfere with the proper prosecution of work.

Later I was told that the plan could be changed as I wanted, and that the change would not increase the cost of the building. I mention this merely that you may know what effect the separation of an appropriation of this kind may have. In other words, you must have somebody responsible for the handling of the whole appropriation. In the case of radio stations, the public works features; that is, the construction of the towers and of the buildings is the much expensive part, being about three-fourths of the entire amount, but the buildings and the towers are incidental to the performance of the work, and the design of the buildings, and their arrangement, is determined by the necessities of the people who fix the wireless equipment, and nobody else can do it.

The CHAIRMAN. That is now a matter of regulation by the department as to who shall approve things of that kind?

Admiral GRIFFIN. Yes; but this is carried still further, and on the last page of Admiral Stanford's hearing, page 212, he proposes that from the current appropriation for the support of wireless stations a certain fixed amount, \$200,000 shall be transferred to the Bureau of Yards and Docks for the public works features. As I said yesterday in regard to the steam machinery appropriation, an appropriation of that kind must be sufficiently flexible to permit doing in any one year a particular kind of work that comes up and is paramount to other work that you might want to do, but for which you have no money.

For instance, this year we are replacing a great many wooden masts at wireless stations with steel towers. We have not money enough to put the equipment in those stations that we would like to have there in order to improve their operative condition, but we think that the towers are the more important at this time, and therefore this year we are spending more money for towers than we would spend another year. Next year we would spend more for the equipment of those stations than we would for towers. In other words, we try to adjust the appropriation to meet the needs of the service, and in all cases the public works part of it is done under the direction of the Bureau of Yards and Docks, just as much-so as if you took that money and put it under that bureau. If you take that money out of the appropriation for the wireless stations and put it under another bureau, you might thus rob the appropriation for wireless stations of a certain amount of money which might be absolutely necessary for carrying on wireless work, but which might not be necessary for the public-works features of wireless stations.

Its inclusion under the appropriation of the Bureau of Steam Engineering would not in the slightest degree operate to prevent the accomplishment of the public-works features of these stations, and, therefore, the transfer of a part of it to another bureau would not serve any useful purpose.

I might say to you gentlemen in passing that we have been in communication with Honolulu from Arlington.

Mr. ROBERTS. What is that distance?

Admiral GRIFFIN. About 5,200 miles.

Mr. ROBERTS. How about your communication with the Eiffel Tower? Is that constant now?

Admiral GRIFFIN. Yes; at this season we get very good communication.

Mr. ROBERTS. But at other seasons you do not get as good results?

Admiral GRIFFIN. Not as good; no.

Mr. ROBERTS. What is the distance from here to the Eiffel Tower?

Admiral GRIFFIN. I imagine it is about 3,000 miles.

Mr. ROBERTS. How do you account for the fact that you get such good results with Honolulu 5,200 miles away, and you can not get such results with Eiffel Tower, which is only 3,000 miles away?

Admiral GRIFFIN. We are getting very good results from the Eiffel Tower.

Mr. ROBERTS. As good or better than from Honolulu?

Admiral GRIFFIN. Better. This is the first time that we have picked up Honolulu, and but for a singular thing that happened out there they would have read the message. A trolley car came along, and all those trolley lines set up electric oscillations, and apparently they got on the same wave length and interfered. It probably would not happen once in a hundred years, but it did happen just as they caught Honolulu and commenced to read the message. I might say also that we are in daily communication with San Francisco. Most of our experiments with San Francisco in the daytime are made on Sunday, because there are fewer interruptions on that day. The set in operation at San Francisco is really the same as the one that is going in at Panama.

HIGH-POWER RADIO STATIONS.

The CHAIRMAN. Admiral, please make a full statement as to the present status and future needs of the several high-power radio stations heretofore authorized, stating fully what has been accomplished, how much has been expended, and at what points, and what further is needed. Please state fully.

Admiral GRIFFIN. The naval appropriation act of August 22, 1912, appropriated \$400,000 for the purchase and preparation of necessary sites, purchase and erection of towers and buildings, and purchase and installation of machinery and apparatus of high-power radio stations (cost not to exceed \$1,000,000) to be located as follows: Isthmian Canal Zone, California coast, Hawaiian Islands, American Samoa, Guam, and in the Philippines.

Of the six stations authorized by this act work has actually been begun on the station located in the Isthmian Canal Zone, now called the Darien station. The towers and radio and electrical equipment

have been contracted for, and the buildings and other public-works features are being constructed by the Isthmian Canal Commission.

The original design of the Darien radio station provided for guyed steel masts instead of for self-supporting towers like those at the Arlington radio station. The lowest bid for these guyed steel masts was about \$75,000. After the opening of bids and following further and careful investigation of the subject it was decided to reject all bids and substitute for the guyed steel masts self-supporting steel towers. Three of these, each 600 feet high, are provided, located on a triangle approximately 900 feet on a side. The decision to change the type of masts was made for the following reasons: The erection of guyed structures of this great height is a new branch of civil engineering, and the wide divergence in design and bids submitted for this item showed that the ideas of able engineers are still far from agreement as to what constitutes an economical and safe design. To appreciate the problem of erection, and more important still, the maintenance of these masts, it must be realized that they have no stiffness whatever aside from that afforded by the guys. Wire rope will stretch, and is subject to continual expansion and contraction. Owing to the inequalities in the ground offered at the Darien radio station all guys of a set can not have the same length or weight. Therefore the adjustment of the guys would have been a complicated matter, requiring continual vigilance from the time of their erection until they finally come to their natural end. Of the three towers at Arlington, one is 600 feet and the others 450 feet each, placed at the points of a triangle whose sides are approximately 400, 400, and 350 feet. All three of the towers at Darien will be 600 feet high, and the sides of the triangle will be approximately 900 feet. It will probably be necessary at the Hawaiian Islands and the Philippines stations to install masts 600 feet high at the points of a triangle at least 1,000 feet on a side. The antenna to be supported between these masts will be of such great length and weight that masts of heavy type will be required. Owing to the great military importance of the high-powered radio stations it is considered that any extra expenditure for the self-supporting steel towers, which are more suitable in character than the guyed towers and which can be depended upon in all probability to last through severe storms, is well justified. The destruction of the towers during hostilities would place the radio station entirely out of commission and beyond all hope of repair during the probable continuance of such hostilities.

It is expected that the towers at Darien will be completed by July 1, 1914, although delays due to the rainy season may delay their completion until September. The buildings will be completed in all probability by April 1, 1914. The contract for the electrical and radio equipment provides that this work shall be completed in June, 1914, but the installation can not be completed until after the completion of the towers. It may be assumed, therefore, that this station will be in operation by the fall of this year.

A number of locations for the Californian coast station were selected by a board of officers, and final decision has been made to erect this station near San Diego. Negotiations for the purchase of the necessary land have been under way for some time, but the purchase has not been concluded.

Preliminary surveys and tests for sites in the Hawaiian Islands and in the Philippines have been made and suitable locations have been tentatively decided upon. No further action has been taken in regard to these stations and no definite action has been taken toward the erection of the high-power stations in Guam and in American Samoa.

To be of proper military and commercial value the chain of high-power radio stations should be at least capable of intercommunication between the adjacent stations. From the standpoint of national defense none of the stations will be of any great value in time of war unless reasonably secure from hostile attack. The sites at Guam and in Samoa are not at present secure from attack and can not be made so except by the construction of defensive works and the stationing of an adequate defending force there. For this reason it is deemed advisable to first erect the stations at Honolulu and in the Philippines and, if possible, make them intercommunicating, and to proceed later with the erection of the station at Guam.

As to the probability of achieving direct communication between the Hawaiian and Philippine stations, the Poulsen arc station at Honolulu has recently been received at the Arlington radio station, and tests at San Francisco with a set similar to that to be installed at Darien have resulted in satisfactory daylight communication with the Arlington radio station. The ultimate developments are still indefinite, and the results which will be achieved within the next year are conjectural. If satisfactory daylight communication between Hawaii and the Philippines can be achieved, it may be possible ultimately to dispense with the erection of the high-power station at Guam, and a station of more moderate power, capable of working with Manila only, could then be erected there.

To insure intercommunication between the Honolulu and Philippine stations will require the installation of extremely powerful and expensive machinery. It can be assumed that the total cost of each station will be not less than \$350,000. That this would represent a very economical outlay for a station of this size can be seen by a comparison with the contract entered into between the English Government and the Marconi Co. for a chain of six high-power radio stations. The following details are authentic:

Each of the six stations is to have a guaranteed day and night range of 2,000 miles. (This is very much less than will be required for the larger stations of our own chain.) The cost per station is placed at £60,000, exclusive of buildings and foundations, and subject also to readjustment for rise in price of materials since 1912. In addition, the Marconi Co. will secure a royalty of 10 per cent of the gross receipts of the stations during a period of 28 years, if during that period Marconi patented apparatus is used in the stations.

It is believed that the station in Samoa should either be eliminated from the scheme of high-power stations or else provided for at some future date as a separate item, should the necessity for it be established. This station would be unprotected from hostile attack. In order to afford an extension to the facilities offered by the other stations, the Samoan station should be as powerful as those at Honolulu and in the Philippines, but by the erection of a small station at Samoa,

which is now underway, it is believed that communication through the radio and cable station at Suva or through the large German radio station to be erected at Apia, Samoa, can be effected and will serve all prospective needs.

It is not deemed advisable at this time to eliminate the Guam station from the scheme of high-powered stations, as its erection may prove to be a necessity to insure proper radio communication and control in the Pacific.

When \$1,000,000 was estimated for the chain of high-power radio stations, it was not fully contemplated to establish one in Samoa, and as Arlington had not been completed the actual cost of such stations was not known. With the completion of Arlington, and the obligations entered into in regard to Darien, we are in a position to estimate more accurately what the probable cost of these stations will be.

A circumstance which contributed to the low cost of the Darien radio station was the adoption of the Poulsen arc radio apparatus instead of spark apparatus. In the existing controversy over the merits of these two systems the advantage to the owners of the Poulsen patents of having their apparatus specified for so notable an installation was great enough to cause them to make a very low offer. The contract price for the radio equipment of this station is, as before stated, roundly \$50,000. Some of the bids ran as high as \$300,000. It can not be expected that this favorable price can be duplicated in the purchase of other installations. The California station should be, by the conditions of the problem, of somewhat greater total cost. The Hawaii and Philippine stations will, as before stated, cost not less than \$350,000 each. Eliminating the Samoa station, the probable amounts required will be as follows:

Darien, Canal Zone.....	\$250, 000
Honolulu, Hawaii.....	350, 000
Philippines.....	350, 000
California.....	250, 000
Guam.....	300, 000
Total.....	1, 500, 000

Should it be possible ultimately to abandon Guam as a high-power station, this amount would be reduced \$250,000, making the total required \$1,250,000.

Out of the \$400,000 already appropriated about \$150,000 is still available.

The actual erection of towers and the purchase of radio equipment for the next stations to be erected, those in California, Hawaii, and the Philippines, should await the results of the tests to be carried out at the Darien station with Arlington. Upon the results of these tests will depend the final type of towers and radio equipment to be adopted at the three other stations. The tests at Darien will, in all probability, be completed by the first of next year, and upon their completion everything should be in readiness for entering upon the construction of the stations in California, Hawaii, and the Philippines. We contemplate issuing the proposals for these stations at the same time, as we think we shall thus secure a better price and so ef-

fect considerable saving over the price we might have to pay if the three stations were advertised separately. We are now in such a position that we could, at short notice, advertise for the towers of the California station, but we are convinced that considerations of economy and efficiency will be better served by deferring this until the experiments with Darien are completed. Furthermore, the balance available from the appropriation of \$400,000 is not enough to pay for the towers.

In view of the expedition which we have every hope of effecting in the construction of the stations in California, Hawaii, and the Philippines, we estimate that the appropriation this year should be \$400,000 for continuing the construction of high-power radio stations.

The military value of this chain of high-power stations during hostilities, or when the usual means of communication are interrupted, can not be overestimated. The total cost of the chain of stations is less than the cost of a modern scout cruiser, while their military value far exceeds that of the scout.

In the act making appropriations for the fiscal year 1913, the appropriation for high-power radio stations followed next after "ocean and lake surveys," without a caption for high-power radio stations, and has been carried under appropriation "ocean and lake surveys." It is suggested that, in making the appropriation this year, the following form be used:

HIGH-POWER RADIO STATIONS.—To continue the erection and equipment of high-power radio stations provided by the act of August 24, 1912. \$400,000.

and that the balance from appropriation "ocean and lake surveys" for the same purpose be transferred to this appropriation under the Bureau of Steam Engineering (equipment).

The expenditures or obligations under this appropriation for high-powered radio stations are to date as follows:

Preliminary surveys on Isthmian Canal Zone.....	\$632. 21
Preliminary surveys in California	129. 35
Darien radio station:	
Federal Telegraph Co., electrical and radio equipment.....	51, 503. 33
Contract, Penn Bridge Co., towers.....	112. 350. 00
Insulation bases, etc., estimated.....	10, 000. 00
Obligated or under construction by Canal Commission—	
Tower foundations, estimated	15, 000. 00
Buildings.....	25, 000. 00
Sewer, water, etc.....	5, 000. 00
Machinery, foundations.....	2, 000. 00
Transformers, etc.....	14, 000. 00
Dwelling house for electrician.....	1, 500. 00
Grounding antenna, etc., estimated.....	10, 000. 00
Total.....	246, 985. 54

The contract with the Federal Telegraph Co. is being changed and reduction in the cost of electrical and radio equipment of about \$3,000 will result, which would make the net obligations to date \$243,985.54. In addition there will be required one dwelling house, \$2,000, for the officer in charge, and miscellaneous equipment estimated at \$2,000, but not now purchased or contracted for, making a probable total for the Darien station of approximately \$248,000.

The following sums have actually been involved to January 17, 1914, on the Darien radio station:

Contract 1948 (A) Penn Bridge Co., towers.....	\$112,350.00
Contract 1948 (B) Federal Telegraph Co., radio and electrical equipment (this is subject to a reduction of about \$3,000).....	51,503.33
	<hr/> 163,853.33
Isthmian Canal Commission bill—No. 37316, pre- liminary surveys.....	\$632.21
Isthmian Canal Commission bill—No. 41381, relocat- ing tower foundations, etc.....	451.80
Isthmian Canal Commission bill—No. 41403, draw- ings.....	16.41
Isthmian Canal Commission bill—No. 41412, pre- liminary work.....	1,675.90
Isthmian Canal Commission bill—No. 41884, in- stallation of water supply and operation pumps.....	1,212.25
Isthmian Canal Commission bill—No. 41868, designs and surveys.....	594.34
Isthmian Canal Commission bill—No. 41842, spur track.....	964.07
Isthmian Canal Commission bill—No. 41818, quar- ters and power house.....	4,804.55
Isthmian Canal Commission bill—No. 41797, in- stallation pumping plant.....	1,781.55
	<hr/> 11,223.08
Total.....	<hr/> 175,076.41

The CHAIRMAN. Admiral, under "Increase of the Navy," the estimates submitted for the authorizations heretofore made under "Construction and machinery," "Torpedo boats," "Equipment," and "Armor and armament," are jointly made by the Bureaus of Steam Engineering and Construction and Repair?

Admiral GRIFFIN. Yes, sir.

The CHAIRMAN. I will ask you if the amounts there estimated are absolutely required? Could you get along with a smaller amount?

Admiral GRIFFIN. We have cut everything to the bone.

The CHAIRMAN. So, for the work to be done under the authorizations heretofore made, this amount is absolutely necessary?

Admiral GRIFFIN. Absolutely necessary.

The CHAIRMAN. Admiral, under the law it is necessary that the department should submit each year a list of vessels to be repaired where the cost exceeds a certain amount. We have not yet received that letter from the department. I want to call your attention to it and ask if you and the Chief of the Bureau of Construction and Repair have made out that list so the Secretary can communicate it to the committee.

Admiral GRIFFIN. I think probably the Secretary has that information. The aide for matériel. I think communicated it last year to you. At any rate, it has been prepared.

(Thereupon, the committee adjourned to meet to-morrow Thursday, January 15, 1914, at 10.30 o'clock a. m.)

INCREASE IN THE CHAPLAIN CORPS, UNITED STATES NAVY.

**THE COMMITTEE ON NAVAL AFFAIRS,
Tuesday, January 20, 1914.**

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. Gentlemen of the committee, the hearing this morning is granted to some very distinguished clergymen representing various churches and organizations of churches relative to the increase of the Chaplain Corps in the Navy.

We have with us this morning prominent and distinguished representatives of various churches, and the committee, I am sure, will be pleased to hear the views of these gentlemen. We will be governed by your wishes, Dr. Radcliff, if you will indicate the program you desire to present.

Dr. WALLACE RADCLIFF. We have practically here representatives from the whole Nation. We have representatives from the Federal Council of the Churches of Christ, which represents all Protestantism with the exception of the Episcopal Church. The Episcopal Church has its representatives here. The Roman Catholic Church has its representative here, representing the Roman Catholic Church of America, and Chaplain Bayard, we might say in a general way, represents distinctly the ideas of the chaplains of the Navy on the general subject here involved.

I will ask you to hear these brethren in succession, representing their different views. I will ask you to first hear Dr. Macfarland. I will state that representing the Federal Council a committee was appointed consisting of Dr. Macfarland, who is the secretary of the Federal Council of the Churches of Christ in America, and with him Dr. Carroll, a very distinguished author, journalist, and statistician, who is also one of the secretaries of the council; Dr. Roberts, of the Presbyterian Church in the United States of America; and Bishop Cranston, who is the bishop of the Methodist Church. Dr. Roberts is out of the country. Bishop Cranston is in the West. Dr. Carroll is here. The council will be represented, so far as our statement is concerned, by Dr. Macfarland, the secretary of the Federal Council.

**STATEMENT OF REV. CHARLES S. MACFARLAND, SECRETARY OF
THE GENERAL COUNCIL OF THE CHURCHES OF CHRIST IN
AMERICA.**

Dr. MACFARLAND. In view of the fact that we have so long been accustomed to speak of the churches in terms of deviation rather than in terms of unity, I think I should remind you that the Federal Council now unites 30 of the so-called Protestant denominations and includes 150,000 churches and ministers and possibly something like

16,000,000 of the people so far as the actual church membership is concerned.

You can readily see that this council, which consists of 400 delegates selected by the assemblies of these 30 denominations to act upon common matters for them, needs to be very careful. I will say that it has never taken any action that we know of that did express what would be practically the unanimous conscientiousness of the churches. Its intention is to act upon those matters upon which it is assured that the churches would wish the council to speak in their united behalf.

The council meets quadrennially, and at its session in Chicago in December, 1912, considerable time was given to the discussion of the question of chaplains both in the Navy and in the Army. The council formulated a petition which was addressed jointly to the President, the Senate and House of Representatives through their committees, the Secretary of War, and the Secretary of the Navy. I have a copy of that resolution which I will not read as it will appear in a moment that it is not necessary to read it, but I beg leave to submit it to the chairman so that you may have it for your files.

The CHAIRMAN. I will direct that it be incorporated in the hearing. Dr. MACFARLAND. I thank you.

(The resolution referred to by Dr. Macfarland follows:)

To the President of the United States, the Senate, the House of Representatives, the Secretary of War, and the Secretary of Navy:

The Federal Council of the Churches of Christ in America, in quadrennial session assembled at Chicago, December 9, 1912, instructed its executive committee to prepare and submit the following memorial:

The latest obtainable reports show that the authorized strength of the Army is a little over 95,000 men, distributed among 157 garrisoned posts and subposts, all of which, however, are not occupied; and that the Navy comprises 35 battleships, 32 cruisers, 21 gunboats, 10 monitors, and 116 smaller vessels, with 53,375 officers and men. Much to our regret, we learn that this great host of men have in the Navy only 21 and in the Army only 67 chaplains to give them aid and comfort in time of illness or suffering.

The Federal Council of the Churches of Christ in America believes that there ought to be more chaplains, and that we should make provision for one chaplain for each battleship and cruiser, for each schoolship and navy yard, and also one for each occupied Army post. We also believe that the providing of chaplains ought not to be treated as a mere matter of denominational proportion in an effort to distribute offices among the various Christian bodies, but rather in the interest of providing adequate moral influence and spiritual help.

In view of all these facts and in view of the further fact that the Government continues to increase the Army and to build battleships, we can not afford to neglect these men whom we call into our service for such official duties. It becomes us, as a God-fearing nation, to give more heed to the higher interests of these men because of their generally high character and because that stand preeminently at the front of our national honor and need.

We would, therefore, appeal most earnestly to the President and to Congress to give immediate attention to these most important matters, for the welfare of the thousands of men directly concerned, and in the larger interest of the duty of this great people to those who serve them in interests so critical, and who are necessarily exposed to the greater possibilities of suffering and death.

SHAILER MATHEWS,
President.

RIVINGTON D. LORD,
Recording Secretary.

FRANK MASON NORTH,
Chairman of Executive Committee.

CHARLES S. MACFARLAND,
Secretary of the Council.

Dr. MACFARLAND. The council then took up the matter with its constituent bodies, which consist of these 30 denominations, and every one of the denominations which has held an assembly—and that means practically all of them—since the action of the Federal Council in December, 1912, has taken action unqualifiedly approving this action of the Federal Council, our custom being to refer important matters of this kind back to the constituent denominations for their ratification. So it is fair to say that I am officially representing, this morning, the Federal Council of churches known as the Protestant churches upon this matter.

Following that action of the constituent denominations ratifying the action of the Federal Council, we met in Baltimore a month ago and at that time the matter came up for review and a report was made on the situation, reporting the ratification by these constituent denominations, and then Chaplain Bayard was invited to address the executive committee and to present the matter from the viewpoint, so far as he was authorized to do so, of the chaplains, and he presented the bill which is now before you and under consideration. That bill was referred to the business committee of the executive committee.

Mr. ROBERTS. Are you referring to the so-called Farr bill?

Dr. MACFARLAND. I am not familiar with the name of it. Chaplain Bayard, is that the name of the bill?

Chaplain BAYARD. No: it is the bill which has been submitted to the committee in response to the invitation of the chairman of the Naval Committee under the direction of the Navy Department.

The CHAIRMAN. That bill is incorporated in the hearings on the general personnel legislation.

Mr. ROBERTS. Has that bill been introduced and is it now pending before Congress?

Chaplain BAYARD. It has not, sir.

Dr. MACFARLAND. I am not familiar with the technical matter. It is the bill for which Chaplain Bayard has been responsible, or the recommendations, if that be the right term. That was considered, and it was found to be the judgment of the executive committee of the Federal Council that that bill expressed, or that set of recommendations expressed, the sense and meaning of the resolution which the Federal Council of the churches had passed originally in December, 1912. The executive committee of the council, as it was their privilege to do, voted its support of these recommendations as being an adequate expression in concrete terms of the action of the Federal Council taken in December, 1912. It is to be remembered that we are here to-day distinctly representing the churches, believing that it is the obligation of the churches to take up such questions as the provision for chaplains in the Navy, inasmuch as it is distinctly understood that the chaplains represent the churches as representing the religious life of the people, and so, therefore, I convey to you, on behalf of these 30 denominations and the Federal Council which represent them, their indorsement of the entire spirit, intent, and purpose of the recommendations to which reference has been made.

The CHAIRMAN. Dr. Macfarland, before taking your seat, permit me to ask if you have any expression to make relative to the recommendation of the Secretary of the Navy concerning welfare secretaries?

Dr. MACFARLAND. The Federal Council of Churches distinctively represents the churches. The Federal Council, therefore, is concerned with the appointment of those men who are qualified to represent the churches in the Army and Navy and their action has, therefore, been with relation to the appointment of chaplains. The chaplains only can represent the churches. They distinctively stand for the religious life of the Nation, if the life of the Nation is expressed adequately and properly by the churches, and, therefore, the Federal Council has taken no action regarding any other matter. I think I should say in frankness, however, that I am very sure it would be the unanimous vote of that body and its constituent denominations that the appointment of chaplains is a matter that stands for itself and by itself, and that the chaplains only would represent the churches so far as they give authority for the conduct of religious exercises, and the power to represent them would rest entirely in the chaplains.

The CHAIRMAN. What is your idea as to the desirability or the efficiency of the work that might be rendered by welfare secretaries supplementary to the work of the chaplains?

Dr. MACFARLAND. I think, and here I speak without any authority, because no action has been taken, I feel quite sure that no objection would be raised to supplementary services. I think I should be perfectly frank in saying that, so far as the matter of substitutional relationship is concerned, I do not think that the churches of the Nation would vote for a substitution of relationship.

Mr. KELLEY. Your recommendation is that the chaplains should be chosen representative men of the church?

Dr. MACFARLAND. Yes, sir.

Mr. BROWNING. You think that the welfare secretaries should be separate from the church?

Dr. MACFARLAND. They are so in the churches of every religious denomination in the Nation. Our religious denominations have certain secretaries for social service. The Federal Council as such is not concerned about the work of the secretaries—that goes without saying, but the church has ordained that certain men should represent the church, and, so far as the Navy is concerned, they would advocate the chaplains as representing the church so far as it is an official organization.

Mr. BROWNING. You do not think that the welfare secretaries would represent the church?

Dr. MACFARLAND. Not in the same sense that the chaplains would. Of course, any layman, if he were doing good work, would represent the church, and any officially appointed person who represent the church. You catch, perhaps, the distinction which I make. I think unquestionably there is no attitude whatever of hostility toward the appointment of men for any kind of good and noble work, and it would not be opposed by the churches.

Mr. BROWNING. Your opinion is that we should have one chaplain for every thousand men?

Dr. MACFARLAND. That was the spirit and intent of the motion as it was passed by the Federal Council: yes, sir.

The CHAIRMAN. I will ask you this question: Does it occur to you that there is any work in a practical line or otherwise that the welfare secretaries would do more efficiently than the chaplains?

Dr. MACFARLAND. That would depend very largely, of course, on the personality of the chaplains.

The CHAIRMAN. Assuming that the chaplains are efficient and that the secretaries are efficient, in the present organization of society or the trend of work in society, is there or is there not—I am not expressing any opinion myself—any work that the welfare secretaries would do more efficiently than the chaplains?

Dr. MACFARLAND. As to a certain kind of work it might be entirely conceivable that they would. I do not think that the churches, so far as I understand them, would oppose supplementary action. The opposition, if there was such an attempt, would be against the substitution of lay workers for chaplains. That, I think, would be the practical if not the entirely unanimous feeling so far as the churches are concerned.

Mr. FARR. The workers should be under the supervision and guidance of the chaplains?

Dr. MACFARLAND. That is the custom in the churches. When the churches have social workers of any kind it is understood that they are under the guidance of the church, and the church expresses that guidance through its ministers or chaplains. That would be the case here.

Dr. RADCLIFF. The Episcopal brethren are represented by a very large committee. We have here Bishop Harding, of this city, and Dr. Cotton Smith, rector of St. John's Church, and we are especially honored by the presence of Bishop Lawrence.

STATEMENT OF BISHOP WILLIAM LAWRENCE, OF MASSACHUSETTS.

Bishop LAWRENCE. The Triennial Convention of the Episcopal Church in New York last October unanimously appointed a commission to press the increase of chaplains in the Navy and, if necessary, a proper increase for the Army. That question had come up a number of times before, and committees and commissions had been appointed on the question of chaplains in the Navy and Army. There is a standing committee on that subject. This committee, of which I am chairman, was unanimously appointed to press this point in view of the fact that we had gone through two wars and practically a generation with an enormous increase in the personnel of the Navy and with no increase in the personnel of chaplains. We represent, therefore, this general convention which is composed of bishops, clergymen, and laymen—laymen equal in numbers to the clergymen—from every State in the Union.

Two members of our present commission are Members of the House of Representatives and, I think, were both members of the general convention. We therefore represent the Episcopal Church throughout the whole United States. I understand that I was made chairman because of the interest that I have had in this subject for a number of years. I have been down to Washington two or three times in the last 10 or 15 years in an informal, personal way, to see if something could not be done, not only to increase the number of chaplains but to bring about such conditions as would bring into the Navy continually better and more effective chaplains. It is not only, therefore, a question of number, but it is a question of the quality

of the men. There has been a steady improvement we all know in the quality of men, and we want to be in a position where the quality will be improved. Any chaplain who is drawn from the ministry ought to be a man who has had seven years experience in higher education, he may have had six years or five years—in other words, he is an educated man. He also ought to be a man who has had some test before he is finally made chaplain as to his efficiency in the work. So far as the increased number is concerned, I want, representing that commission and the Episcopal Church, to join in supporting the bill or that part of the bill which has been presented to increase the chaplains in number in proportion as the personnel goes up of one to a thousand, no large number, perhaps not more than seven chaplains being appointed in any one year so as not to make the number increase too fast.

A man who may have done first-rate work in a parish may fall down as a chaplain, he may not get into touch. It is a peculiar life. A thousand men in a box of steel, that is a peculiar situation. The man has to be tested, and therefore in this bill there is this condition that there shall be created a corps or body of acting chaplains who for a number of years can be tested, and who, if they fall down, can be honorably discharged from the Navy. Then the Navy gets the pick of the men, the men who know how to do their work and who are able to do their work.

In addition to that, anybody who has had anything to do with the Navy knows that if a doctor is going to hold his position he must have rank and he must have pay equal to the rank. Otherwise the officers and men put him in a different class. All we ask in this bill is no favor, but that the chaplains, the men who have shown themselves up to the job, shall have rank and pay equal to the rank, and that the rank shall be continuously increasing.

What is the situation? A few years ago I picked out six men in Massachusetts, young clergymen, who are doing effective work. Two years after I picked out those men I wrote them a letter: "I think I can get you a position of chaplain in the Navy if you will tell me that you will take it into serious consideration enough for me to present your name," and I did not get a "yes" from one of them. I do not know a first-rate man in Massachusetts, in the Episcopal Church of Massachusetts, who will enter a chaplaincy of the Navy under present conditions.

Mr. ROBERTS. Why will they not?

Bishop LAWRENCE. For one reason a man says: "I am in a city of 20,000 inhabitants. I have a church here. I am in charge of perhaps 800 people, and they look to me for spiritual leadership—three-fourths of them working people. I am interested in this job. Why should I leave this job and shut myself up within steel walls with 800 men?" The captain has got to be captain of the ship, and the chaplain must be to a certain degree subservient always; and he says, "If I go in there I will receive a position which is not commensurate with the rank, and if I am put in a mess with the officers I have to stand all the extra expense of the mess without having the pay as the other officers have. I am not so much in this for money, but I want to have a position in the ship which will enable me to do the most effective service, and as I study the rules and the whole

conditions I am not in it." That has been going on, and the people say: "Why do you not have effective chaplains in the Navy?" One reason is that these men are not ready, unless they are so devoted to the work of the Navy that they are ready to take their chance. The men which the Navy wants are men, to my mind, who have been five or eight years in the ministry, who have won their spurs, and who have the stuff in them, and the only way to get them is to make all the conditions as favorable, not for money, but for efficiency, as possible.

Mr. BUCHANAN. Why not for money?

Bishop LAWRENCE. They are not in the ministry for money. If they can get a living for themselves, their wives, and their children they are satisfied. A man can not do work knowing that his wife is sick and that he can not pay his doctor's bill. All he is after is a moderate living, such a condition as will enable him to do effective service.

Mr. KELLEY. If these things you mention were corrected the Navy might look attractive to a man in a city of 20,000 with a church of 1,000 congregation?

Bishop LAWRENCE. Without any question. It is an interesting bit of work, and the fact is that a man who is a good chaplain is soon known throughout the squadron and his influence soon gets beyond his ship. These men do not realize that, but as soon as they get in they discover it. So the three conditions which I want to impress upon you are the proportion of the personnel, one to a thousand; next, this new feature, an entirely new feature, of acting chaplains to try out the men; and next, no discrimination against chaplains and no discrimination for them, and to place them on the same basis that the physicians—the surgeons—are placed, and with the rank they should have equal pay and steady improvement in the rank. What I am after is not only the increase in the number, but such conditions as will improve the quality of the men.

Mr. Chairman, if I may say one word in regard to the question asked Dr. Macfarland as to the welfare secretaries, and in this I speak personally, to my mind the most effective organization for the improvement or for the moral welfare is the steadiness of the men on the ships. We must remember that to-day the men in the Navy, on the ships, are good men; they are good stuff, they are not like the men who went into the Navy 30 or 40 years ago because of getting into trouble somewhere else. So far as the ship is concerned, the captain has to be captain. The chaplain has a difficult position of keeping in touch with the men and keeping in touch with the officers. That is his business. I do not myself see how on a ship you are going to have a welfare secretary who in a way shall be under the chaplain and at the same time under the captain without friction. Then in the next place to-day a clergyman who has had five or seven years' experience in the ministry is spending a great deal of his time in welfare work. He has boys' clubs three evenings in a week, and is engaged in all kinds of so-called welfare work. That is the job a clergyman has to-day. A clergyman puts altogether too little time on the sermons and services. He is drawn out of that into this welfare work. Most young men who have been in the ministry five or eight years are to a certain degree welfare

experts. That being the case, he could, with the permission of the captain, select one, two, or three of the best men on the ship, maybe marines, maybe sailors, of the best men on the ship; they are under the orders of the chaplain, they are a part of the ship, and he can train them to be the best social workers for the Navy that you can find. There you would have a system, there you would have discipline. Yes; social workers by all means, but social workers in a way that is in harmony with the conditions of the Navy.

Mr. BROWNING. I understand from what you say, Bishop, that you would not advocate the appointment of welfare secretaries?

Bishop LAWRENCE. I have not talked it over with the secretary or anybody in detail enough to know how the thing is going to be worked. So far as I can understand, it seems to be full of frictional possibilities, but it may be that there are other conditions which will make it better. My question is whether it is necessary for the Government to go to the extra expense of having a corps of welfare secretaries. What are you going to do with them after 40 or 50 years? Is the Government going to pension them? Has that question arisen? What rank are they to hold? Has that question arisen? Are they to be on the ship or off the ship? Has that question arisen?

Mr. ROBERTS. That question has arisen in the minds of some of the committee, I might say.

Mr. GRAY. What is the object of this service, to raise the moral standing of the men or to increase the efficiency of the men as a fighting force?

The CHAIRMAN. This meeting has been granted to the representatives of the various churches and church organizations throughout the country to present their views relative to the increase in the chaplain force of the Navy, and they are presenting their views and reasons.

Mr. GRAY. I thought these gentlemen were from the chaplain force. I want to understand the object of the hearing.

The CHAIRMAN. This is Bishop Lawrence, of Massachusetts, who is now addressing the committee.

Bishop LAWRENCE. On the question of the inquiry, I have never heard of an immoral Navy being a good fighting force, and therefore I should say the first essential in the Navy was to create a high standard of character and intelligence, thereby making them a good fighting force. That is what we are after.

Mr. GRAY. Do you regard a Christian as a better fighter than a man who is uncivilized or unchristianized?

Bishop LAWRENCE. That would take more of a generalization than I would be able to work out this morning. I can say that in the long run the Christian nations have beaten out the savages. I do not know anything about individual Christians.

Mr. GRAY. Pardon me. I am not asking these questions in a spirit of criticism. I wanted to get the thought which you were pursuing to raise the moral standard of the Navy, all of which I would approve, or you might be pursuing a policy to increase the efficiency of the fighting force.—I suppose I would approve that, too, but I should approve the other more.

Mr. ROBERTS. There is another side to this whole question. We take the sons of our citizens into the Navy and hold out to the

parents that they will be under the best conditions. Yet at present we have no adequate spiritual leadership or guidance to give to those young men. In other words, an increase of the chaplain corps is designed not only to increase the morale of the men, but to give them a Christian influence which they would have in their homes but which we are now unable to give them in the Navy.

Bishop LAWRENCE. The intent is really to make consistent the situation in the Navy to-day with the recruiting advertisements and papers. The recruiting advertisements and papers say something, and the condition in the Navy to-day with the situation of the chaplains is something else. Mothers and fathers are led to bring their boys into the training school with the idea that they are going to have the same moral and religious influence which they had in the past. Under present conditions they can not.

Mr. GRAY. Mr. Chairman, what is the proposition before us? Is it proposed to increase the force of chaplains?

The CHAIRMAN. Yes, sir.

Mr. BROWNING. I would like to ask whether you think the welfare secretaries would represent the churches?

Bishop LAWRENCE. I should say that it is a difficult thing to say who represents the church. To my mind the welfare secretaries, provided I could know exactly what they were at, what they were, and whether in the Navy or out of the Navy, I could answer that question better. There is no question in my mind but that welfare work has to be done; it is only a question of under what auspices, but to my mind it is for the economy of the Government as well as for the efficiency to draw into the Navy the clergymen who have been taught in welfare work and who will do the welfare work which they do not have time for now.

Mr. BROWNING. I rather like that idea of yours, to have the chaplain select the welfare secretaries from the crew.

Bishop LAWRENCE. My daughter is in correspondence with sailors of the United States Navy all around the world. They are intelligent, a self-respecting, a good lot of men. From that body of men you can get welfare secretaries in touch with the men who, to my mind, are infinitely superior to the skilled land welfare secretary, and you have not the religious question to rise up in the appointment.

Mr. LEE. If a man were dying and asked for a minister, do you think it would be a good thing, in your judgment, to send a welfare secretary to see him?

Bishop LAWRENCE. It depends a good deal upon the welfare secretary. There are some secretaries that I should be glad to see, and some, if I had the strength, I would like to kick out. One might say the same thing about the ministers.

Mr. LEE. If you wanted to see a doctor, you would not want to see the man who drove the doctor around in his carriage?

Bishop LAWRENCE. No, sir.

Mr. HENSLEY. You are confronted, as I understand it, with this situation, that the personnel of the Navy has been increasing, the expenses have been increasing at an enormous rate, and there has been no increase in the chaplain corps of the Navy for many, many years. That is the situation that confronts you and the one which you want to overcome by some legislation?

Bishop LAWRENCE. That is exactly it.

Mr. GRAY. Do you think that a man can shoot another man better if he is a Christian than if he is a barbarian?

Bishop LAWRENCE. I would rather have the committee discuss that question.

I want to remind the committee that it is of the greatest importance to see that this bill, which I think is in your records—

The **CHAIRMAN** (interposing). Yes, sir.

Bishop LAWRENCE (continuing). Is written into the appropriation bill. There is no use unless it is written into the appropriation bill. I am very much obliged to you.

Mr. KELLEY. A man now receiving in his church, say, \$2,500—of course, I understand, that the question of salary is not the governing question—about what salary would offer some inducement to a man to leave a comfortable town with \$2,500 salary and go into the Navy?

Bishop LAWRENCE. Eastern Massachusetts has, perhaps, with two or three exceptions, the highest salary list of any diocese in any of the States, and our average is about \$1,500. I should say that a man to-day who would be a first-rate man for the Navy, who has been five or eight years in the ministry, is getting, perhaps, \$1,800 or \$2,000, but he has his wife and family right there, and he can handle his own expenses as he wants to. He is going to rise from that. Day before yesterday I shook hands with a fellow in the city of Lawrence. He is a power in that city. He went through the big strike and kept in touch with both sides, the mill owners and the mill workers. I have lived in the city of Lawrence, where there are many working people. That fellow has 2,000 people, and he is doing the work well. He is doing a lot of welfare work and he has a lot of young men under him. He is a power in the whole city. That man is getting a house and \$2,000. He is not asking any more. That man it might be very difficult to get, but I think we could have gotten him five years ago with the proper inducement.

Mr. BUCHANAN. The salary does have something to do with the inducement in order to secure an efficient chaplain?

Bishop LAWRENCE. Any man to be efficient has to have money enough to make his mind easy that his wife and children are getting a reasonable support; that is all.

Mr. BUCHANAN. He has expenses the same as the rest of us?

Bishop LAWRENCE. Yes; he has to live.

Mr. STEPHENS. Speaking of the rank, do you think it preferable to have a minister aboard ship called "chaplain" or by some other title?

Bishop LAWRENCE. That question, I think, the men in the Navy could answer better than I could. I am quite sure that any man who has to be in a position on a ship must be a commissioned officer. Anybody who knows anything of the Army and Navy knows that they have traditions, and the Army and Navy have discovered in connection with the doctors, engineers, and all, that they have to be commissioned. When you get that it means rank, and whether he should be called "chaplain" or something else I think the men of the Navy could say better than I.

Mr. STEPHENS. A chaplain may rise, if I understand the bill, to the rank of captain. Do you believe it would be better for the spiritual welfare of the men at sea to have him rise?

Bishop LAWRENCE. This bill names captain as the highest rank.

Mr. STEPHENS. Do you believe that it should go higher than that?

Bishop LAWRENCE. No; I am for this bill.

Mr. STEPHENS. Has there been any expression from the men at sea to your daughter concerning this question of the chaplains?

Bishop LAWRENCE. No. She knows them as they come ashore. That question does not arise except as she may come in touch with the chaplains.

Mr. STEPHENS. No expression from the men?

Bishop LAWRENCE. No. I should say that the expression of the men would be largely as to the personality of the chaplain. When you come down to it, it is the captain of the ship who does the business, and no man on the ship can do business if he does not have rank. A man might be the ablest naval officer and still he could not hold his own if he had not the rank. The ship is an aristocracy; it is not a democracy. The Government can take a chaplain, and if he is a good man he is valuable, and if he is not a good man they have no use for him. As a matter of rank, the best man can not do his best work unless he has proper rank.

Mr. ROBERTS. Is it your idea, Bishop, that every chaplain on a battleship should have the rank of captain?

Bishop LAWRENCE. No. I think it would be largely a question of seniority and that there should be a steady rise. If the Navy Department chooses to put a chaplain with the rank of first lieutenant on a ship, very good.

Mr. ROBERTS. In your opinion, would the chaplain with the rank of lieutenant do as good work as a chaplain on the same ship with the rank of captain? Would there be any difference in the work, provided that he was qualified to do the work?

Bishop LAWRENCE. I think it would be recognized as a question of seniority. What work he could do would depend upon the personality of the man, provided it was understood that he was in regular line of promotion through seniority, as in the long run it is through the Navy.

Mr. ROBERTS. This bill to which you have referred contemplates the pay of captain when the chaplain reaches that grade?

Bishop LAWRENCE. Yes, sir. Suppose there were 70,000 personnel. That would mean 70 chaplains. Under this bill there can not be more than 10 men with the rank of captain, and if they do not reach that by seniority there would be only from 5 to 10.

The CHAIRMAN. In other words, this is simply a matter of encouragement?

Bishop LAWRENCE. Yes, sir.

Mr. ROBERTS. Have you worked out the possibility of the pay of a chaplain while holding the rank of captain?

Bishop LAWRENCE. No, sir.

Mr. ROBERTS. The pay is increased every five years. A captain begins at \$4,000, and after 20 years of service, which, I think, can not possibly happen in the Navy now, he would get up to \$5,000. I am speaking of shore pay. Have you worked that problem out to see what the maximum pay might be of a chaplain under the bill you propose, whether it would be possible for a chaplain to ever get \$5,000?

Bishop LAWRENCE. No, sir. It may be that Chaplain Bayard has worked that out.

Mr. ROBERTS. Under the law as it now stands, the chaplains go up the rank of captain, but the pay stays at the rate of lieutenant commander?

Bishop LAWRENCE. Yes, sir.

Mr. ROBERTS. They begin in the rank of lieutenant commander at \$3,000, and after 20 years can work up to \$4,000, which is the minimum pay of a captain?

Bishop LAWRENCE. Yes, sir.

Mr. ROBERTS. I was curious to know how much increase of pay it would be possible for any chaplain to get if we should let his pay go on with his rank and he reached the grade of captain?

Bishop LAWRENCE. I have not worked that out.

Mr. ROBERTS. My object in bringing that up is to point out to you gentlemen here what, perhaps, may be a bone of contention in the consideration of this bill—the question of rank. If the chaplains were going to get the pay without bringing into the equation the question of rank, the proposition might be easier to get through Congress. I simply offer that as a suggestion.

Bishop LAWRENCE. This bill provides that of the total number of chaplains authorized by law, 10 per cent shall have the rank of captain in the Navy, 20 per cent the rank of commander, 30 per cent the rank of lieutenant commander, and 40 per cent the rank of lieutenant.

Mr. ROBERTS. Do you start in your bill at the rank of lieutenant—senior?

Bishop LAWRENCE. Yes, sir.

Mr. ROBERTS. You start the chaplains, then, at \$2,400 instead of \$2,000?

Bishop LAWRENCE. Yes, sir.

Mr. HENSLEY. I want to say that I am in entire sympathy with the plan of this movement, but the thought has occurred to me, and I think it is necessary to ask you, whether or not you have considered the question of the day and time approaching when there will be a cessation of these expansions and extensions in the Navy, when the nations of the world will reach a relationship with each other that will make it unnecessary to continue increasing the navies of the world, and thus increasing the burdens placed upon the people?

Bishop LAWRENCE. I have not, rather on the same ground that I suppose the naval committee in making their appropriations and increasing the expenditures of the Navy do not feel that they can give that consideration. I do not know whether that consideration has come up in the committee.

Mr. HENSLEY. As I prefaced my statement, I am in accord with the spirit of your movement, but I would like to have an opinion from you, if you are in a position to give, with reference to whether or not we are approaching that day and time?

Bishop LAWRENCE. I would want to see Mr. Carnegie before I answered that question. As a matter of fact, it is so vague that I should not want to hazard any opinion. I really do not know. All I can say is that I should assume if that happy day should come and we should lay down our arms and simply have a police force the churches would be so rejoiced that they would take the whole naval chaplain corps and pension them. That is what we are all after.

We have not been able to see the light, and I could not hazard an opinion as to the future.

Mr. BUCHANAN. Do you not think that the church should use its great influence to bring about a condition where it would not be necessary to expand the Navy?

Bishop LAWRENCE. I suppose—I speak without knowledge—that every member of this committee is anxious, so far as they can consistently with their own judgment, to stop the expansion of the Navy.

Mr. BUCHANAN. Would not that be consistent with Christianity?

Bishop LAWRENCE. We are all working for it.

(The bill submitted by Bishop Lawrence follows:—)

[An act to increase the efficiency of the Corps of Chaplains in the United States Navy.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the passage of this act there shall be one chaplain in the United States Navy for each and every one thousand of the personnel of the Navy, as determined by law, including the Marine Corps, midshipmen, apprentice seamen, and naval prisoners.

That hereafter original appointments shall be made by the Secretary of the Navy in the grade of acting chaplain, and the grade of acting chaplain in the Navy is hereby authorized and established: *Provided*, That before appointment candidates shall pass such moral and professional examinations by a board of chaplains as the Secretary of the Navy may require.

That after three years' sea service aboard ship acting chaplains shall undergo such moral and professional examinations by a board of chaplains as the Secretary of the Navy may prescribe to determine their fitness to receive commissions in the Navy, and if found qualified they shall be commissioned chaplains in the Navy: *Provided*, That the number of acting chaplains in the Navy for temporary service shall not exceed fifty in number.

That if any acting chaplain shall fail upon the examinations prescribed in this Act, he shall be honorably discharged from the naval service, and the appointment of an acting chaplain may be revoked at any time in the discretion of the Secretary of the Navy.

That of the total number of chaplains authorized by law ten per centum shall have the rank of captain in the Navy, twenty per centum the rank of commander, thirty per centum the rank of lieutenant commander, and forty per centum the rank of lieutenant. All acting chaplains shall have the rank of lieutenant, junior grade: *Provided*, That all chaplains and acting chaplains shall have the same pay, allowances, privileges, and opportunities for the performances of their duties as are now or may hereafter be provided by law or Navy regulations or naval instructions for other officers of the same rank and length of service in the Navy: *And provided further*, That no provision of this Act shall operate to reduce the rank, pay, or allowances that would have been received by any person in the Navy except for the passage of this Act: *And provided further*, That not more than seven chaplains in the Navy shall be appointed in any one year.

That all laws or parts of laws inconsistent with the provisions of this Act be, and the same are, hereby repealed.

Dr. RADCLIFF. I now take the pleasure of introducing Father O'Hern, representing the Roman Catholic Church.

STATEMENT OF REV. LEWIS J. O'HERN, C. S. P., OF WASHINGTON, D. C.

Father O'HERN. Mr. Chairman and gentlemen of the committee, I assure you that it is a great pleasure to appear before this Committee on Naval Affairs in such distinguished company as the official representative of the Catholic bishops and archbishops of the United States.

I shall read to you a letter which I have received from His Eminence Cardinal Gibbons, of Baltimore, as follows:

CARDINAL'S RESIDENCE,
408 NORTH CHARLES STREET,
Baltimore, January 15, 1914.

Rev. LEWIS J. O'HEARN, C. S. P.,
Apostolic Mission House, Washington, D. C.

MY DEAR FATHER O'HEARN: As our representative in matters pertaining to Army and Navy chaplains, may I ask you to personally call on the members of the Committee on Naval Affairs, both of the Senate and the House of Representatives, and urge upon them the necessity of more chaplains for the Navy? Explain to them that the proposed scheme of substituting "welfare secretaries" for chaplains does not meet with the approval of the American Catholic archbishop, since no laymen can do the work of an ordained clergyman.

Most faithfully, yours, in Xt.

J. CARDINAL GIBBONS,
Archbishop of Baltimore.

It is a pleasure to agree with so much that has been stated here this morning and to indorse so much of what the honorable Secretary of the Navy has suggested in his report, which I hold in my hand. The keynote of our position on this question is sounded in the honorable Secretary's own words, "More religious leaders needed." There has been no increase in the chaplain corps of the Navy since 1842, yet the number of officers and men has notably increased. These men need the uplifting influence of religion, and need to be often reminded, as the honorable Secretary says, of the truth that "man's first and highest obligation is to his Maker." He needs the close personal influence of a religious leader the more because he has been removed by enlistment from the many helpful influences which he had at home. The question arises as to the nature of these religious leaders. The honorable Secretary says. "The country will, I am sure, warmly approve the suggestion that not less than 60 chaplains or welfare secretaries should be authorized," and on page 18 of his annual report he speaks of the four departments of activity in which these religious leaders are needed—religious thought, Bible study, athletics, and entertainment.

Now, gentlemen, as regards athletics and entertainments, I might point with pride to the excellent work of our chaplains along these lines. I maintain that for such work they are as efficient as it is possible for any person to be. I am not so familiar with the work in the Navy, because I have not been brought into such close contact with the Navy chaplains as I have with those of the Army, but I take it for granted that they work along the same lines in both corps. A chaplain was in charge of the instruction camp at Winchester, Va., last summer, and I had the pleasure of meeting afterwards in Washington the colonel who was in command, and he spoke of the wonderful work which had been done for the entertainment of the soldiers all during the summer by the chaplain. He furnished moving-picture and theatrical entertainments, so that every night the men were kept in camp, happy, and away from dangerous environments.

As regards athletics, it is the chaplain's spirit that animates work of this kind. All of us know that religion is the fountain of perpetual youth. That the chaplain, therefore, can direct the athletics, even though he may not personally enter into them, is something

which I think I may justly claim, and increasing age need be no bar to him in working along these lines. No age limit is provided for the welfare secretary, and therefore no remedy is offered in the proposed legislation as to keeping young men perpetually in charge of this department which it is intended shall be introduced into our Navy. So much for the lines of natural activity; so much for the entertainments and athletics.

As regards the strictly religious work there can be no comparison. The clergyman is a man set apart solemnly to perpetuate the work of Christ in the world. He is one who speaks with authority, one who has been given the Divine commission to preach the Gospel to every creature. He conducts the Divine services. He dispenses the Sacraments, something which no layman is authorized to do. He has an official position. He commands respect. By his office he merits confidence also. He can be a friend to all without losing dignity, and he has an enthusiasm which can be begotten only by a man who has a supernatural love of God and of his fellow men. To religious work they expect to devote not a few years only, but their whole lives.

The chaplains we have selected and recommended have been picked men, physically, intellectually, and spiritually strong, chosen from the whole country. They have been and shall be in the future our élite. They have been carefully trained through long years of study, discipline, and self-denial; they have developed those qualities necessary for religious leaders; they are the kind of men contemplated by our honorable secretary. Influenced by a Divine call they have devoted themselves unselfishly to the welfare and happiness of others. Their aim is to secure efficiency, patriotism, morality, obedience to every law, human, and Divine, in a word, to develop the highest type of Christian citizenship. For the doing of this work, gentlemen, there is no man so efficient as an ordained and accredited minister of the gospel.

The question has come up as to the efficiency of the chaplains to promote the moral welfare of the men. That question has been directly asked and, in answer to that, I quote from a letter of a chaplain, written to me from Olangapo, Philippine Islands, as follows:

By the way, I have an argument for the committee that will mean something. When I went ashore, the doctor called me and said, "Father, do you know that 10 per cent of the men on this post have venereal diseases?" Needless to say I was surprised. In seven months there was less than 3 per cent, and such figures ought to influence the committee in this matter.

This is a direct question of morality, namely, keeping the men out of associations which ruin them physically and morally, and therefore I argue that such work can be done best by ordained clergymen. Such a one speaks with authority. He stands for the law of God in its integrity. He preaches the Commandments, "Thou shalt" and "thou shalt not." He wields that influence which alone can keep men moral.

There is another question which I wish to bring up and it is this. We know that this is a day of unrest. Men are looking for remedies for all our ills, and many fancy that they see a penacea for everything in some form or other of socialism. It has been preached at Army posts and naval stations and results in desertions, as I have heard upon reliable authority. What is the remedy for this? Religion, pure and

undefiled. All the Christian churches preach the duty of patriotism; they preach loyalty to the flag, and that all authority is from God. We must love and protect our country's honor, and we must be ready to suffer hard things for the public good. Therefore, gentlemen, the remedy for the spread of socialism in the naval ranks to-day, I think, is to be found in an efficient chaplain corps which stands for authority both human and divine.

We ask that the bill which has been submitted be incorporated into the appropriation bill, and we trust that in this way the result we are seeking will be attained.

Mr. WITHERSPOON. What is your idea about this? This proposition is to have 70 chaplains, I believe?

The CHAIRMAN. Sixty.

Mr. WITHERSPOON. Sixty chaplains. That would be a chaplain on each of the 39 battleships. There are a great many small ships like destroyers and submarines, ships of that kind, where a chaplain could not well live. What is your idea about how the men on those ships would be furnished with religious services?

Father O'HERN. My idea is that there should be one chaplain for every 1,000 men. That is absolutely necessary. No chaplain can competently care spiritually for more than a thousand men.

The CHAIRMAN. May I suggest in answer to your question that the torpedo boats, submarines, and small craft are usually kept at the base station or in groups, and the chaplain would serve them in groups.

Mr. WITHERSPOON. And live on the ship?

The CHAIRMAN. He might, or he might live on the mother ship that goes with the smaller craft.

Mr. KELLEY. Do you think there is any force to the suggestion which I have heard made that rank might tend to separate the chaplain from the men rather than bring them together?

Father O'HERN. No, sir. I think the rank would give the chaplain a certain prestige which would increase the efficiency of his work. That is my opinion.

Mr. BUCHANAN. You made a statement in regard to socialism. Do you mean socialism as propounded by the Socialist Party?

Father O'HERN. The socialism I refer to is that of one who would say to a man wearing a uniform, "Why are you wearing that uniform?" or "You are not fighting for the Government, you are fighting for Hearst or Guggenheim. Take off that uniform. You are not serving the country, but you are serving a few rich men who control the country."

Mr. BUCHANAN. Has that been said by men in the Navy?

Father O'HERN. This argument has been used at certain posts and has resulted in desertions. The influence to counteract such arguments is the teaching of patriotism and love of country, and the duty of bearing burdens for the common good, even though they weigh heavily upon the individual for a time. This the chaplain is best fitted to do.

Mr. BUCHANAN. Have you any information as to who is responsible for that?

Father O'HERN. Not as to their names.

Mr. HENSLEY. You speak of the remedy. Have you ever thought of there being efficacy in an effort made by people in authority—Con-

gress, for instance—to equalize conditions so that one can not point to men like Guggenheim and others being the principal beneficiaries?

Father O'HERN. I have thought of that.

Mr. HENSLEY. Some responsibility rests there also?

Father O'HERN. Yes, sir; I believe it does.

Mr. ROBERTS. Suppose the committee and Congress should see fit or could only see their way clear to increasing the number of chaplains to 60, substantially under present conditions of rank and pay, would you be opposed to that form of relief for the situation, because the pay was not increased and the rank was not given?

Father O'HERN. No, sir. While I desire the chaplains to be put on an equal footing with the others, I would be willing to take something less as regards rank and pay in order that we might get the increased number of chaplains.

Mr. ROBERTS. In other words, a half a loaf would be better than no bread?

Father O'HERN. Yes, sir. Still, I think they should not be discriminated against.

Mr. BROWNING. Is your plan of legislation practically embodied in the bill which has been presented?

Father O'HERN. Yes, sir.

Mr. BROWNING. What is your opinion of the welfare secretaries?

Father O'HERN. Now that you have asked me, with your permission I shall explain it. The welfare-secretary issue should not be mixed up with the chaplain issue. The chaplain, as I have said, is a religious leader entirely separate and distinct from the welfare secretary. Under the proposed plan that the welfare secretary shall work under the direction of the chaplain I think there is bound to be friction. The only solution of the difficulty is, as has been stated by Bishop Lawrence, for the chaplain to pick his helpers from among the enlisted men, who shall conduct this welfare work under his direction. This plan would obviate friction and also save the Navy the money which would be expended for the bringing in of outside men to do the work under the name of welfare secretaries.

Mr. BROWNING. Do you think that the chaplains would get the men already in the service to do good work?

Father O'HERN. Yes, sir: and all friction would be avoided in that way.

Mr. WITHERSPOON. Assigning a chaplain to every thousand men, would he have plenty of time to do all the proper work of a chaplain and, in addition, this work that the supposed secretary would do?

Father O'HERN. I think so.

Mr. BRITTEN. I would like to inquire if the present bill were carried into effect does it provide for a division of the various religious denominations?

The CHAIRMAN. No, sir. That is all apportioned in the department. There has been no complaint along that line that I have ever heard.

Mr. BRITTEN. Of the 23 chaplains at present supplied to the Navy what are their religious denominations?

The CHAIRMAN. I do not know.

Father O'HERN. I have that information in my pocket, if you wish it.

Dr. RADCLIFF. The proportion was determined by President Roosevelt and never has been changed. Our church has been objecting to the proportion.

Mr. BRITTEN. Was any attempt ever made to supply chaplains approximately along the line of the number of men preferring a certain religion? For instance, if there are 50 Protestants, and 25 Catholics in a group, would it be proper to supply a Catholic priest for a post of that kind, or vice versa? Has any attempt ever been made to follow the desire of the men?

Dr. RADCLIFF. Mr. Roosevelt said he did, but we thought he guessed at it.

Father O'HERN. I have a memorandum which shows the proportion referred to a few moments ago.

The **CHAIRMAN.** Please place it in the record.

(The memorandum referred to by Father O'Hern follows:)

MEMORANDUM.

[Memorandum in reference to the number of Navy chaplains that should be assigned to the various denominations on the basis of church membership, as shown by *World's Almanac*, 1914 edition.]

The almanac data indicates a total church membership of approximately 36,000,000, of which approximately 30,934,000 are included in denominations now represented by chaplains. Of this number approximately 12,881,000 are Roman Catholics. This would give that church slightly over 41 per cent of the chaplains, or 9.9 out of the present 24 Navy chaplains. As a matter of fact, that denomination now has only 6 chaplains, leaving a shortage of 3.9 due the Roman Catholic Church. The following table shows the status in detail:

Denominations.	Church membership.	Number chaplains entitled to.	Number in service.	Excess.	Shortage.
Protestant Episcopal, all (2) kinds.....	980,851	0.76	5	4.24	
Disciples of Christ, all (2) kinds.....	1,497,545	1.16	1		0.16
Methodists, all (17) kinds.....	6,905,095	5.36	6	.64	
Roman Catholics.....	12,881,034	9.99	6		3.99
Universalists.....	51,716	.04	1	.96	
Baptists, all (15) kinds.....	5,894,232	4.57	3		1.57
Congregationalists.....	742,350	.58	1	.42	
Presbyterians, all (12) kinds.....	1,981,949	1.54	1		.54
Total.....	30,934,772	24.00	24	6.26	6.26

NOTE.—None of the denominations comprising the approximate 5,000,000 church members not now represented by chaplains are, with the exception of the Lutherans, of sufficient numbers to entitle them to representation. The Lutherans, 26 kinds, have a church membership of 2,253,702, and are entitled to 1.7 chaplains.

The church membership in the table does not include unconfirmed minors, either Catholic or Protestant, which explains the low rating given in the almanac figures regarding some churches. For instance, the Official Catholic Directory for 1913 gives that church a membership of 15,154,158, while the *World's Almanac* credits it with only 12,881,034.

Mr. BRITTEN. The service that is given or rendered aboard ship, is it practically the same irrespective of the religious denomination of the chaplain?

Father O'HERN. Well, no, sir; not entirely. At the morning service a Catholic priest would celebrate mass. That is our official form of divine worship, and all the Catholics would, I expect, be present at that. Whether others would come I am not prepared to answer, but there is held in the evening a general service, consisting of the singing of hymns and preaching. I presume that the character of this service is more or less determined by the chaplain. I know that such is true in the Army.

Mr. WITHERSPOON. Have you inquired into this to know whether or not there is a denominational feeling among the men, so that if you had a Catholic priest on a battleship the Protestants would be indisposed to go to his service, and, on the other hand, if you had a Protestant minister, whether the Catholics on the ship would be indisposed to be served in that way? Are they of such liberal views that you think the chaplain could do his work efficiently?

Father O'HERN. Yes, sir; I think the chaplain could minister to all.

Mr. WITHERSPOON. You do?

Father O'HERN. Yes, sir; outside of matters such as the administration of the sacraments, as when a Catholic is dying and wishes to receive the rites of the church. Outside of special cases of this kind, I believe that the chaplain does minister to all.

Mr. WITHERSPOON. In regard to the special cases which you mention, if a minister of another denomination had charge of the ship, it could be arranged to secure another chaplain on another ship?

Father O'HERN. It is not easily done. One of the chaplains has written me saying that it is generally very difficult to get from one ship to another, and that many of our men on board ships without Catholic chaplains die without the care of the priest, which they desire.

The CHAIRMAN. In the report of the Federal Council of the Churches of Christ in America in the quadrennial session assembled at Chicago December 9, 1912, on the point suggested, it says:

We also believe that the providing of chaplains ought not to be treated as a mere matter of denominational proportion in an effort to distribute offices among the various Christian bodies, but rather in the interest of providing adequate moral influence and spiritual help.

Father O'HERN. According to the figures quoted above, the Catholic Church is entitled to a little more than 41 per cent of the religious leaders, and in a representative Government such as ours she should have something to say about the kind of religious leaders appointed. Therefore I ask you to give kindly consideration to the words of His Eminence, Cardinal Gibbons, that welfare secretaries can not be considered as substitutes for regularly ordained ministers of the gospel.

Mr. FARR. How many denominations are represented in this recommendation before the committee?

The CHAIRMAN. Thirty-two have been mentioned.

Mr. BRITTEN. Has any effort been made by the chaplains in the service to ascertain how many men are buried at sea or who die without having spiritual aid in their final hours?

Father O'HERN. No, sir; not so far as I know.

Dr. MACFARLAND. The number would be very large.

The CHAIRMAN. We are very much obliged to you, Father O'Hern.

STATEMENT OF CHAPLAIN G. LIVINGSTON BAYARD, UNITED STATES NAVY.

Chaplain BAYARD. Mr. Chairman and gentlemen of the committee, the bill which has been referred to is the draft of a bill which was submitted to this committee upon the invitation of the chairman of the committee, and under the direction of the Navy Department, to make suggestions for personnel legislation.

Let me say in the beginning that this bill represents 10 years of thought and work and care along this line, and it has been drafted after conferring with officers in every part of the world, in all the fleets, and with Admiral Dewey, who is the senior ranking officer of the Navy; Admiral Upshur, who is the senior graduate of the Naval Academy; Admiral Howard, president of the Naval Examining and Retiring Board; and Gen. Biddle, who is the Commandant of the Marine Corps. All these officers and hundreds of others are convinced that there should be at least one chaplain to each 1,000 of personnel for the religious, moral, and spiritual welfare of the Navy, and the other provisions of the bill herewith submitted and recommended by all churches.

I beg to ask you to consider the particular wording of this bill in this respect, which is that from and after the passage of this act there shall be one chaplain in the United States Navy for each and every 1,000 personnel of the Navy as determined by the law, including the Marine Corps, midshipmen, apprentice seamen, and naval prisoners. That is absolutely necessary in order to have the chaplains to minister to the midshipmen, the naval prisoners, and the apprentice seamen, because they are in addition to the regular personnel corps of the Navy.

MR. BROWNING. Would that increase the number of chaplains to more than 60?

CHAPLAIN BAYARD. There would be, I judge, about 65, including the marines, the midshipmen, the apprentice seamen, and the naval prisoners, who are, as you know, in addition to the regular personnel of the Navy.

As to the acting chaplains, that provision is vital to our very life in the Navy, because we have no way of determining now what sort of a man a candidate for a chaplaincy may be. He may have the highest recommendations of the church and fall down absolutely when required to face the difficult and delicate problems presented to him aboard a battleship. After he is commissioned and appointed he is permanently in the service and we have no way of eliminating him except by court-martial, and that is one of the most difficult things to do. This provision with regard to acting chaplains provides that the Secretary shall have authority to appoint these acting chaplains, and an acting chaplain may resign at any time, and the Secretary has the authority to drop him at any time without cause, and at the end of three years he is examined again, and if he has made good he is commissioned in the Navy.

MR. ROBERTS. At the end of the three years what sort of an examination would there be conducted?

CHAPLAIN BAYARD. The same sort of examination that is now required of candidates for a chaplaincy, with the reports of commanding officers upon his efficiency and his record of accomplishment in the Navy for three years.

MR. ROBERTS. Under your bill the chaplains are taken in after examination?

CHAPLAIN BAYARD. Yes, sir; always. They are now. Everybody is agreed to the necessity of that examination. The plan now is that when there is a vacancy, such as the last vacancy in the Presbyterian Church, for instance, the Navy Department notifies the Presbyterian Church that there is this vacancy to be filled, and the Presbyterian Church proceeds to select as many of its qualified clergymen as can

be persuaded to take the examination, and one man of the number who comes up for the examination is selected and is appointed to the permanent establishment. That is all right as far as it goes, but the acting appointment is necessary as a protection both to the church and to the Navy.

Mr. KELLEY. Speaking of the number of chaplains, what is the number in the British navy, the German navy, and the French navy?

Chaplain BAYARD. The British have a state church.

Mr. KELLEY. But as to the number?

Chaplain BAYARD. The number is one chaplain to each nine hundred odd of the personnel. In the British Navy the chaplain is a representative of the state church and no other clergyman is allowed aboard any British ship to hold religious services. In the navy the chaplains have no rank, but they are representatives of the state church which has been established for a thousand years, and every big ship has a chaplain. In the British Army, however, where the different churches are represented and the condition exists very similar to ours in the Navy, where the Roman Catholics, Baptists, Methodists, and Presbyterians, as well as the Church of England are represented, there they give their chaplains rank, and not only rank, but they give them the high rank of major general. In the army they start in as captains and come up to the rank of major generals of the army.

Mr. KELLEY. What is the practice in France?

Chaplain BAYARD. There is trouble between the church and the State and the analogy can not be drawn there.

Mr. ROBERTS. In the British Navy how are the chaplains quartered and messed aboard ship?

Chaplain BAYARD. They are quartered and messed in the officers' mess, sir.

Mr. ROBERTS. Just how do they get at their relative place in the mess and quarters?

Chaplain BAYARD. It is the law of the State as well as the regulation of the navy and the custom of the state church for a thousand years that gives them their standing.

Mr. ROBERTS. Do they get quarters such as a lieutenant commander might?

Chaplain BAYARD. Yes, sir; I should say as commander. On the British ships that I have been aboard the chaplain has the relative place possibly of commander.

Mr. ROBERTS. And he has a commander's choice of quarters?

Chaplain BAYARD. Yes, sir; all the way through.

Mr. ROBERTS. One of the vexed questions in our Navy has been the status of the chaplain aboard ship; about his quarters, etc., there has been more or less friction?

Chaplain BAYARD. No, sir. Rank solves all our problems of standing.

Mr. ROBERTS. There has been trouble in the past?

Chaplain BAYARD. I have known of none. I have been the chaplain of the European, South Atlantic, Caribbean, North Atlantic, and Pacific Fleets, and I have never known of any friction along that line at all. Everything depends on the personality of the chaplain. All our problems are solved by the personality of the chaplain when he has adequate rank. Give him the rank and the perquisites

of that rank, the same condition that exists with every other officer of the Navy. The chaplain asks for no favors, but he demands of you not to discriminate against him. I want to say that on account of this discrimination which exists now, a chaplain is obliged to serve seven years with the rank of a junior lieutenant in the Navy, seven years. It is impossible to attract the men from the churches who Bishop Lawrence and everybody else who has testified here agrees the Navy must have. The Navy welcomes the strong, good chaplain, and everybody agrees that he is one of the most efficient factors to the welfare and happiness of the personnel, but we can not get those men now from the churches. At the time of this last Presbyterian vacancy, the Presbyterian Church with something like 2,000,000 of personnel and 12,000 clergymen could not persuade the desirable men who were suggested for the appointment as chaplain to allow their names to be considered. That places the Navy at a great disadvantage. The Navy must have, if you are going to have chaplains at all, strong men, men who ring true every time you touch them, and who have a great human heart. The chaplain asks for no favor, he simply asks only for a fair chance to do his work, and that which is essential to his position in the Navy, rank, pay, and allowances up to and including the grade of captain. The chaplain is now deprived of the pay of his rank in the grades of commander and captain.

The CHAIRMAN. You spoke of a chaplain serving in the grade of junior lieutenant for seven years?

Chaplain BAYARD. Yes, sir.

The CHAIRMAN. How long does the line officer serve?

Chaplain BAYARD. The line officers, I know, become lieutenants at about the age of 25. The doctor is made a lieutenant at about the age of 25, but the average age of the chaplain now, according to the 1913 Navy Register as he is appointed to the grade of lieutenant is over 40 years of age. There is not a fair chance for the chaplains in the Navy.

Mr. WITHERSPOON. From your observation, and you seem to have had a great deal of experience, I would like to know whether you think there will be any trouble arise because the men of different denominations have to be served by a chaplain of one denomination?

Chaplain BAYARD. We are considering the good chaplain, and we have no concern with any other; the good chaplain ministers to all alike. Many of the sailors have no idea what particular church the chaplain represents. It does not enter into their consideration at all. He is simply their chaplain, that is all; and they know him and love him as their chaplain.

Mr. FARR. It is a question of religion, not creed?

Chaplain BAYARD. Yes, sir; religion, pure and simple.

Mr. BROWNING. I would like to get your opinion with regard to the welfare secretaries, because you have had experience.

Chaplain BAYARD. The Secretary of the Navy has made certain recommendations with reference to the welfare secretaries and he can give you more enlightenment on that subject than I can, sir.

(Thereupon, the committee adjourned to meet to-morrow, Wednesday, January 21, 1914, at 11 o'clock a. m.)

[No. 9.]

THE COMMITTEE ON NAVAL AFFAIRS,

Thursday, January 15, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF CAPT. J. H. GIBBONS, SUPERINTENDENT OF
THE UNITED STATES NAVAL ACADEMY.**

The CHAIRMAN. Gentlemen, we have with us this morning Capt. Gibbons, superintendent of the Naval Academy.

On page 84, "One professor as head of the department of physics, \$3,600" has been eliminated.

Capt. GIBBONS. That department has been combined with electrical engineering. Prof. Terry, who held that position, was paid from the Naval Academy appropriation. He has been made a professor of mathematics in the Navy.

The CHAIRMAN. Paid under "Pay of the Navy"?

Capt. GIBBONS. Yes, sir.

The CHAIRMAN. The others are the same as last year?

Capt. GIBBONS. Yes, sir; there has been no change.

The CHAIRMAN. And the salaries are fixed by law?

Capt. GIBBONS. Yes, sir. There are no new items in this bill, and all of the estimates have been reduced by the department.

The CHAIRMAN. On page 89 you have reduced "Current and Miscellaneous Expenses, Naval Academy, \$10,000," from \$38,500 to \$28,500?

Capt. GIBBONS. That was done by the department. The Navy Department, following out its general policy of reducing appropriations at shore stations, made these two reductions in our estimates.

The CHAIRMAN. What was the occasion of this reduction?

Capt. GIBBONS. They just give us this general lump sum and say that we must cut our cloth to fit it.

The CHAIRMAN. It is just a lump sum appropriation?

Capt. GIBBONS. Yes, sir.

Mr. BUCHANAN. What will be the result?

The CHAIRMAN. It is a kind of contingent fund for various little items.

Mr. BUCHANAN. Will it impair the efficiency of the academy?

Capt. GIBBONS. We think that we can go on with the maintenance and general keep up, but it will cut out any general improvements, etc. The estimates that we submitted to the department were based on our experience of the year before. The purpose is now to be rigidly economical.

Mr. BUCHANAN. I believe in being economical myself, unless it impairs the efficiency of the work that is to be done.

The CHAIRMAN. "Maintenance and repairs, Naval Academy," is reduced from \$350,000 to \$275,000. There is a reduction of \$75,000. Please tell us about that, Captain.

Capt. GIBBONS. That reduction was also made by the Navy Department on our general estimates. You will notice that that is for repairs of buildings, improvements, etc.

The CHAIRMAN. We have been making pretty liberal appropriations for repairs there for some time. Was it on account of the expenditures already made in that line?

Capt. GIBBONS. Mostly along the line of improvements. We have built a great many new walks and new walls, and then from time to time the work on the terraces has taken quite a lot of money. We have had the sinking of some of the steam lines. Other contingencies may come up.

The CHAIRMAN. They have been cared for heretofore?

Capt. GIBBONS. Yes, sir. If things go along normally we can get along with this reduced amount. This does not provide for emergencies.

The CHAIRMAN. In the past we have been appropriating to take care and accomplish those things, and having done that, you do not need so much money now?

Capt. GIBBONS. Yes, sir. We think we can get on this year as usual. The department cut it down to the lowest possible figure.

The CHAIRMAN. The language is the same?

Capt. GIBBONS. Yes, sir; exactly the same.

The CHAIRMAN. Under the appropriations heretofore made you have already built a great many of the walks and walls?

Capt. GIBBONS. All roads, walks, sewers, and similar works are built and maintained by our own labor. For repairs to buildings, etc., we keep a number of masons, carpenters, painters, and other workmen.

The CHAIRMAN. I believe that disposes of the appropriations for the academy.

I will ask you, Captain, to tell the committee of the condition and status of the work there, what you have to say with reference to the general situation of the school, what its signs of promise are, the work, etc.?

Capt. GIBBONS. The buildings at the academy are in as good a condition as could be expected considering that a lot of the contract work was not particularly well done, and some of the buildings were begun 10 years ago, and the last ones 5 or 6 years ago. We have great trouble in keeping the terraces of Bancroft Hall water-tight. Bancroft Hall was designed for 500 midshipmen, and after its construction was begun Congress doubled the number of midshipmen, so that the room originally designed for a mess room could not be used. We are now using a room under the terrace and are having some trouble in keeping it water-tight. The roofing of most of the buildings, on account of the contraction and expansion, has given a good deal of trouble. The gymnasium, armory, and chapel require constant attention. Cracks have developed in some of the buildings, which we are watching, but at present do not consider dangerous. I might explain to the committee that many of the buildings are on made ground that has settled somewhat. The greatest need of the academy at the present time is a sea wall around the power house. I think the members of the committee who have been there are probably

familiar with that. The power house was the first building authorized and the last completed, because the foundations were very poor. It has now been completed and has been in operation about two years. The contractor who attempted to build the sea wall gave it up. I think there is a suit pending now. The plan is to complete it at an estimated cost of \$50,000, but it can go on another year. The department cut that item out.

Mr. TALBOTT. The board of visitors recommended it.

The CHAIRMAN. The suit is not yet determined?

Capt. GIBBONS. I do not think it is.

The CHAIRMAN. And, pending the decision of the suit as to the failure of the contractor, you will not suffer for this wall for the present?

Capt. GIBBONS. I consider it the most urgent work to be done if you are ever going to expend anything except for maintenance. I consider that necessary for the protection of the water front. The rest of it is all well walled, as you know, from the Chesapeake side. They have completed putting the wires underground, and the bridge authorized two years ago is practically completed.

The CHAIRMAN. Has anything been done as to the acoustics of the chapel?

Capt. GIBBONS. No. I might explain to the committee that the chapel was constructed at a cost of about \$400,000. We found out after occupying it that the acoustic properties were very bad. We remedied that somewhat by screening off the dome and draping the upper part of the structure. But this made the interior unsightly. They have all been taken down now, and it is as originally planned, but the acoustic properties are bad. Several people have plans for improving the condition, and I think one inventor has been before the department or the committee with a scheme for which, if not satisfactory, there would be no cost.

The CHAIRMAN. He never came before the committee; but he came to see me. His plan was to cover the whole dome with very fine high-strung silk threads to break the vibrations and to control them so as to destroy the echo; but he wanted a number of thousand dollars for it. I do not remember how much. That matter has never been acted upon or referred to the committee by the department. He also was in conference with the officials at the department. I believe you had one time hung up there some cloth or something like that?

Capt. GIBBONS. Yes, sir; it was very unsightly. We had a lot of khaki, and we made these banners and hung them up. This dome, until last month, has been entirely screened off by a cloth screen which was very unsightly. The principal feature of the building is the dome.

The CHAIRMAN. Did any of those things improve the acoustics?

Capt. GIBBONS. Slightly. I find before taking them down that the improvement was perceptible, but not very great.

Mr. BUCHANAN. As to the sea wall that you spoke of, what is the importance of that sea wall?

Capt. GIBBONS. It is to prevent the erosion of the land by the Severn River.

Mr. BUCHANAN. What will be the result of the delay in completing it? Will there be any damage?

Capt. GIBBONS. There is a liability of damage, but it is not imminent. It will have to be undertaken some time.

Mr. BUCHANAN. It would not cost any more to complete it now than at some later date?

Capt. GIBBONS. No, sir.

Mr. BUCHANAN. Is it important that it should be completed?

Capt. GIBBONS. I consider it the most important in the way of public works there.

Mr. BUCHANAN. What can be the ground for the delay, if it has to be done and if the money has to be expended some time? Why delay now—because of this suit which is pending?

Capt. GIBBONS. No, sir. I think it is delayed because the Navy Department wishes to undertake nothing but absolutely necessary work this year. I would not say that this was absolutely necessary at this time, but it is work that will have to be done some time. It can be postponed without damage a year or two.

Mr. BUCHANAN. Can it be postponed without doing any harm to the property there?

Capt. GIBBONS. I should say that it could be postponed without imminent danger.

Mr. BROWNING. You spoke of the roofs contracting and expanding. What are the roofs made of?

Capt. GIBBONS. Copper.

Mr. BROWNING. And there is contraction and expansion?

Capt. GIBBONS. Yes, sir.

Mr. BROWNING. I thought it was generally accepted that you did not have much contraction or expansion with copper roofs.

Capt. GIBBONS. We find by practical experience that we do. We have to make repairs to keep the roofs water-tight.

Mr. WITHERSPOON. Captain, there was pretty general dissatisfaction expressed on the floor of the House in debate in the last Congress on this proposition: They say that the Members of the House appoint young men to Annapolis and that they are so rigidly examined that they can not get into the academy. That is very disappointing to a Congressman who selects a nice-looking young man, who belongs to a family of great political influence in his district. They do not like it. I would like to have your views on the question as to whether or not the examinations are too rigid.

Capt. GIBBONS. My opinion is that the examinations are not too rigid; but I would like to say that I think no examination could be prepared that a certain number of applicants would not find too hard, from a lack of preparation. I have always said that I think any young man who has the advantage of a public-school education up to one year or two years in a high school ought to have no trouble in passing the examination. In order to ascertain whether these examinations were too hard, the Navy Department sent out inquiries to all the public schools, and I understand the consensus of opinion to have been that they are not.

Mr. WITHERSPOON. That is, the public schools?

Capt. GIBBONS. Yes, sir. I myself have always been opposed to any idea of the preparatory school. I claim that if a young man has the right material in him and will work, there is no trouble about his getting into the academy. The examination, as you all know,

covers simply the common school branches, in addition to algebra and geometry.

Mr. WITHERSPOON. You have been making it easier?

Capt. GIBBONS. Yes; we left out one of the studies—universal history.

Mr. WITHERSPOON. Why did you do that, if you think it is not too rigid?

Capt. GIBBONS. In compliance with the demand for making it easier.

Mr. WITHERSPOON. Do you not think that demand should be disregarded, if it is wrong?

Capt. GIBBONS. Personally, I do.

Mr. WITHERSPOON. I do, too. What I want to find out is whether it is to the interest of the service.

Capt. GIBBONS. It is to the interest of the service to maintain a high standard at the academy.

Mr. WITHERSPOON. How many young men who are admitted under these examinations are able to take the course and pass all the examinations in the course and graduate? What percentage of them fail?

Capt. GIBBONS. Between 65 and 70 per cent are graduated.

Mr. WITHERSPOON. That would be about 35 per cent who fail?

Capt. GIBBONS. Yes, sir.

Mr. WITHERSPOON. If 35 per cent of those who stand this examination and who are admitted fail to maintain themselves in the course, does not that rather show that the examination is not rigid enough?

Capt. GIBBONS. I should hardly say so, sir. We have had a large increase in the number and we have been working under pressure for the last 10 years because of the demand for graduates. When the Navy was increased, Congress doubled the number of midshipmen. With this greatly increased number and with fewer officers available for instructors, it was difficult to keep the standard up. Formerly there were about 300 midshipmen, and we were able to give more individual attention to them, but with eight or nine hundred it has been necessary to alter the standard in order to supply this greatly increased number demanded.

Mr. WITHERSPOON. Of this 35 per cent that fail, do you think that any of them fail because they do not have sufficient preparation when they enter the academy?

Capt. GIBBONS. Of the 35 per cent?

Mr. WITHERSPOON. Any part of them.

Capt. GIBBONS. Yes, sir. They are not well grounded in the fundamentals and they have not taken advantage of the education that the States offer them. There is enough money spent in the States to give them all sufficient education. I went so far as to look into the money spent in the various States for public education, and I found that the State of Washington spends more money than any other State for public instruction; but in looking over the list I found that just as many of them were successful that came from States in the South or in the West or in New England. There is nothing regional about educational failures. The fault is entirely with the individual; and when the individual fails he promptly thinks that the fault is with the system.

Mr. WITHERSPOON. If the boy has the brains and industry he will get through.

Capt. GIBBONS. I do not know of any more democratic institution than the Naval Academy, and if a man is equal to the competition, does the work and has the brains, he will get through without any trouble. We find that about 30 per cent of those appointed give their best efforts toward attaining the highest possible standard and that about 40 per cent do not do any more than they have to. They have the intellectual equipment but do not work hard. For instance, if a man gets between 2.5 and 3 on the scale of 4 in any study he is satisfied. They have brains enough to do better. There are about 30 per cent of failures. Many do not appreciate what it will mean to them in the future and how much their position on the naval list when they go out into the service depends on their marks at the academy.

Mr. WITHERSPOON. Does not the efficiency of the service require that a boy who has not good industry should be eliminated?

Capt. GIBBONS. Yes, sir.

Mr. WITHERSPOON. And if it is shown that he is lacking intellectually and unfit, he should be eliminated?

Capt. GIBBONS. Yes, sir; that is my view.

Mr. BUCHANAN. On what do you base their efficiency to be qualified to enter the academy?

Capt. GIBBONS. On their mental and physical ability.

Mr. BUCHANAN. On percentages like in the civil service?

Capt. GIBBONS. Exactly.

Mr. BUCHANAN. What is the lowest percentage?

Capt. GIBBONS. Sixty-two and one-half per cent.

Mr. BUCHANAN. Have you any information as to the number that succeed who get a high percentage when admitted and those that have a low percentage? To illustrate: Say one applicant makes 65 per cent and another one 95 per cent, have you any information as to the difference of those two in their success in qualifying themselves to proceed after they have been admitted to the academy?

Capt. GIBBONS. I have not any exact data, but I know from individual instances that you can not say because a man passes the entrance examination that he will complete his course in as high a grade as he entered. That is, there are candidates who coach for the entrance examination and pass in certain studies, geography, spelling, and grammar, but after they get through the first two years at the academy and get into the second class, where applied sciences, such as marine and electrical engineering are taken up, a good many of them fail.

Mr. BUCHANAN. If they pass a high percentage at the entrance examination that is no absolute evidence—

Capt. GIBBONS (interposing). That they will complete the four years' course.

Mr. BUCHANAN. You never compiled any data?

Capt. GIBBONS. No, sir.

Mr. BUCHANAN. It seems to me that that would be very interesting.

Mr. BATHRICK. Does not that demonstrate that this examination at the academy does not prove the efficiency of the man?

Capt. GIBBONS. It does not. They have to be examined before they are admitted; that is the law.

Mr. HENSLEY. As I understand, a boy who just succeeds in passing, say who receives 65 per cent, may be better grounded in the fundamentals than a boy who gets a higher percentage?

Capt. GIBBONS. Yes, sir.

Mr. HENSLEY. And with the same opportunities, with the same training, it is manifest that the boy is going to prosecute his work more diligently and more industriously beyond any doubt?

Capt. GIBBONS. Yes, sir.

Mr. BATHRICK. Take one study, for example. A boy who has studied geometry in a well-conducted public school or a high school, when he enters your academy where do you start him on geometry?

Capt. GIBBONS. At the beginning. He goes over algebra and geometry after he gets in.

Mr. BATHRICK. He goes over the same studies he has pursued in the public school?

Capt. GIBBONS. Yes, sir; because we find very often that they do not get the same course of instruction, and in the naval profession we find that they must be well grounded in mathematics.

Mr. BATHRICK. After giving him the examination on entrance in geometry and algebra, you start him at the beginning?

Capt. GIBBONS. Yes, sir; with reference especially to the naval profession.

Mr. BATHRICK. Suppose a man arrives at the academy, and, not having had education beyond this point in the public schools, you start him there?

Capt. GIBBONS. I think he would have a harder time than in the public schools, because he has keener competition. The time is limited at the academy. I think that is one of the things people do not appreciate. We do not have the time to take a man and try to find out what his particular defects are and give him a lot of additional instruction as they do in the colleges. He has a certain amount of work to get over in four years, and at that time we are supposed to graduate him as an ensign in the Navy.

Mr. BATHRICK. As to mathematics, for instance, he has as much time in your academy as in the average university?

Capt. GIBBONS. No, sir; because there is the military feature.

Mr. BATHRICK. If you take a man and start him back in a study, is not that an indication that the examinations are rather severe?

Capt. GIBBONS. No, sir. Sometimes he will not work.

Mr. BATHRICK. If he will not work, the boy is not competent under any circumstances. You do not examine him as to whether he works or not?

Capt. GIBBONS. Yes, sir.

Mr. BATHRICK. How can you ascertain whether or not he is a worker?

Capt. GIBBONS. By the results of the recitations and examinations. You give a man a certain amount of work to do and if he comes in the next morning unprepared, it shows that he has not applied himself.

Mr. BATHRICK. The point I want to make is this, if you start him back on the course of study in the public schools while you examine him in the advanced grades—while you examine a man in an advanced study, you do not start him there, I think that is evidence that your examination is pretty severe.

The CHAIRMAN. It is simply to give him the benefit of some review work.

Mr. BUCHANAN. You speak of these preparation schools. I understand that you do not approve of them. Do you know the percentage who have gone to the preparation schools that pass—I mean the per-

centage of applicants, and those who have only gone to the public schools or city schools?

Capt. GIBBONS. I have no data of that kind prepared.

Mr. BUCHANAN. You do not know what the difference in efficiency is? Is it a common thing to go to the preparation schools?

Capt. GIBBONS. Yes, sir. The idea seems to have been spread about that they can not pass the examination unless they have coaching. I never have agreed with that proposition.

Mr. BATHRICK. That is the general result.

Capt. GIBBONS. I would not say so.

Mr. BATHRICK. It has been in my district. I have appointed young men in the district without regard to any party affiliation or political influence, and all of them have failed. I further desire to say that I do not believe there is any district in the United States where the schools are better conducted than in my district, and I think I can substantiate that statement.

Mr. HENSLEY. My experience has been just to the contrary. A young man from my district who was a graduate of the public schools, he was employed there by a railroad company as bookkeeper and clerk, for some time I doubted very much his ability to pass the examination, but he had no difficulty in passing it.

Mr. BATHRICK. Did he go to a preparatory school?

Mr. HENSLEY. No, sir. He may have reviewed his studied.

Mr. BATHRICK. A great many of them fall down.

The CHAIRMAN. I appointed two young men from my district, one right from the schools in the district, and without going to any other school he came here and passed the examination.

Mr. BUTLER. I have had nine young men do the same thing. I always select them without any reference to political influence. I have had five stars.

Mr. BROWNING. Captain, you said a few moments ago that about 40 per cent of the boys at the academy just passed at 2.5?

Capt. GIBBONS. Between 2.5 and 3.

Mr. BROWNING. In your observations, after those boys have graduated and become ensigns, have the boys that only passed with 2.5 to 3 made as good officers as those who have passed with a higher average?

Capt. GIBBONS. You can not grade the subsequent careers of officers always on their standing at the academy. The latter is the best assessment that can be made before they go out into the service. A good many of them develop later. I would not be in a position to assess the value of officers in the Navy on what they have done when they are graduated at the academy.

Mr. BROWNING. And, further, from your observation, whether these young men, after they have been made ensigns in the Navy, have made good officers?

Capt. GIBBONS. I think many of them regret after they get into the service that they did not improve the time spent at the academy.

Mr. BROWNING. But generally they make good officers?

Capt. GIBBONS. Yes, sir. A lot of young men graduate and go to sea and find out that they do not like the profession, and a good many want to take up other professions.

Mr. BATHRICK. You have said that there was a pressure for more officers and that you have reduced or lessened the rigidity of your curriculum for the purpose of increasing the output?

Capt. GIBBONS. Yes, sir; that is the policy.

Mr. BATHRICK. I think you stated on your previous hearing that your output was about 150 a year?

Capt. GIBBONS. Yes, sir.

Mr. BATHRICK. And that you were 3,000 officers short?

Capt. GIBBONS. I did not say that, but the chairman of the committee did, and it also came from the Chief of the Bureau of Navigation.

The CHAIRMAN. I said that they were about 3,000 short on a war basis.

Mr. BATHRICK. Assuming that to be substantially correct and that we are building more ships every year—

Mr. WITHERSPOON (interposing). We have not decided on that yet.

Mr. BATHRICK. Assuming that we are building more ships every year, it shows that we are 20 years behind, with the present output, if we did not build another ship, and how long will it take you to catch up with the increased output?

Capt. GIBBONS. I do not think anybody could tell that. We may get better material as we go on. I simply go on averages. In the last 10 years the average number of graduates has been 150. It will be 156 this year.

Mr. BATHRICK. Do you not think it is possible to have some system or plan to recruit officers from the enlisted men?

Capt. GIBBONS. We have that system now.

Mr. BATHRICK. We have not it to any considerable extent.

Capt. GIBBONS. I think there are 10 or 15 appointed a year.

Mr. BUTLER. There are 12 appointed each year.

Mr. BATHRICK. They reach the grade of ensign?

Capt. GIBBONS. Yes, sir; they are appointed as ensigns.

Mr. BATHRICK. And then their age practically bars them?

Capt. GIBBONS. I think we get the best results by taking the men at the most impressionable age. It is now 16 to 20 years of age. It used to be from 14 to 18. In the naval profession, like a number of others, I think that the younger you get a man to go through this course the better officer he makes.

Mr. BATHRICK. I am talking about the possibility of getting officers from the enlisted men. Have you thought out any plan?

Capt. GIBBONS. I have not.

Mr. BATHRICK. Have you given the subject any thought?

Capt. GIBBONS. I have not given the subject any thought at all. I have been too busy with the training of midshipmen.

Mr. BATHRICK. In Great Britain they have given it a great deal of thought and have accomplished considerable in that direction.

Capt. GIBBONS. There is a movement of that kind on foot now, an educational scheme aboard ship, and the Naval Academy is charged with the preparation of the textbooks.

Mr. BATHRICK. You are preparing the textbooks for that purpose?

Capt. GIBBONS. Yes, sir.

Mr. BATHRICK. Do you not think that some scheme could be devised whereby the proficient, industrious, and studious young men from the enlisted corps—

Capt. GIBBONS (interposing). Could be encouraged? I think that is the feeling. For instance, we have a good many men who enlist and find that they do not like it and get an appointment at the academy and go through. I think that is the best way. There is

more chance for a young man. When they get to be 30 years of age they do not like to try for a commission.

Mr. BATHRICK. If there was a plan whereby, under certain rules and regulations, selections could be made of a certain number of young men without the necessity of their being appointed by Congressmen, selected for their proficiency, do you think that would be a good scheme?

Capt. GIBBONS. I think they might go through the academy.

Mr. HENSLEY. Without the necessity of a Congressman designating him.

Capt. GIBBONS. That was tried about 30 or 40 years ago, they tell me, but the few who took it rather discouraged the many who did not.

Mr. HENSLEY. There is quite a difference in the enlisted men now. There were many more foreigners in the Navy at that time?

Capt. GIBBONS. Yes, sir.

Mr. HENSLEY. We have a higher class of boys now as enlisted men than those who enlisted 30 years ago.

Capt. GIBBONS. They had apprentices in those days. Of course, there was a large percentage of foreigners in the personnel of the ships in those days, but the apprentices were mostly young Americans.

Mr. HENSLEY. Have you any information upon which you could base a conclusion with reference to the number of foreigners we had then as compared with now?

Capt. GIBBONS. In the Navy?

Mr. HENSLEY. Yes, sir.

THE CHAIRMAN. That information is given in the report of the Chief of the Bureau of Navigation. The percentage now is down to the minimum, two or three per cent.

I spoke about the number of officers which the Navy was short on a war basis, about 3,000. We do not desire to maintain the number of officers in time of peace equal to a war basis. That would put a full crew on every ship we have. We have certain ships in reserve. We have full crews on ships in active service and those in reserve have only skeleton crews. If we had the full list of officers, why, the expenses of the yearly appropriations would be practically doubled.

Mr. BATHRICK. What would we do with the ships in case of war if we could not officer them?

The CHAIRMAN. Aside from the active officers there are many men who have served in the Navy and in the naval militia and others that would come in, just as every other Government has, to fill out the complement.

Mr. FARR. In which of the four years at the academy do most of the boys fail?

Capt. GIBBONS. The first year. The percentage decreases as they go up.

Mr. FARR. Do you regard that as a result of the preparation?

Capt. GIBBONS. More the result of the character of the individual.

Mr. FARR. In which of the studies do they mostly fail?

Capt. GIBBONS. Mostly in mathematics and some in English. If a man is good in mathematics he is not, sometimes, good in English. There are four subjects: Mathematics, English, drawing, and

languages. Mathematics includes algebra, trigonometry, and geometry. A man who is good in mathematics frequently finds it very difficult to get along in the English and language departments.

Mr. WITHERSPOON. The power of the boy to master the course and get the full advantage of it depends on his intellectual power, his industry, and his preparation?

Capt. GIBBONS. Yes, sir.

Mr. WITHERSPOON. If a man has sufficient intellectual power and industry, and is insufficiently prepared, he will not master the course as well as if he had the preparation, would he?

Capt. GIBBONS. There are exceptions, like there are in every profession. Young men have come there with very little preparation and been graduated.

Mr. WITHERSPOON. In those cases the boys had an extra amount of brains and industry?

Capt. GIBBONS. I should think that they had the average amount of brains, at all events.

Mr. WITHERSPOON. Take two boys with the same mental power and the same industry, is it not a self-evident fact that the one who had the better preparation would master the course better than the other one?

Capt. GIBBONS. Yes, sir; he would. Sometimes we find that mental activity is combined with moral obliquity and then on account of their bad conduct they are dropped.

Mr. WITHERSPOON. In regard to this military duty which they have to perform at the academy, what part of their time is consumed in learning the military part of the education, blacksmithing, carpenter work, learning about the wireless telegraphy, the telephone system, ventilating system, and other things of that kind?

Capt. GIBBONS. About one-half of their time.

Mr. WITHERSPOON. In the ordinary college where they do not have to devote half of their time to these subjects, it is not as necessary that they should be fully prepared to comprehend the educational part of it as there is at the academy where they have to devote so much of their time to these special things?

Capt. GIBBONS. That is true.

Mr. WITHERSPOON. What I said about Congressmen did not refer to any member of the committee, but it referred to the group that consumed about five hours in the House one day on a bill that itself did not have anything on earth to do with it, making their complaints about the rigidity of the examination.

Mr. BUCHANAN. The reason that I asked the question I did in regard to the percentages is that I am not very familiar with the examinations taken by those who apply to the academy, but the usual examinations of the civil service for employment, in my opinion, require a great many questions to be answered that do not have anything to do with the employment. Again, I have seen cases where a man who passed a very poor paper examination for a position would develop into a very efficient man in the position he was seeking, and a man who had been schooled for the particular examination and who would pass a high examination would prove to be inefficient for the position. I have seen many cases of that among mechanics, and the thought I had was to get information, if you have any, as to the result at the academy in regard to that. There are some, for

example, who take the examination who do not have an opportunity to develop their mental ability or their physical qualities, but as soon as they do have an opportunity they take every advantage of it, and some of the others who do not have that, have taken instruction at these preparation schools preparatory to the examination and who would not take advantage of it after they have been admitted to the academy or to the position they were seeking. I have no disposition to condemn men on that account, because I believe in efficiency and always have, but it is a question how we are going to get the most efficient ones.

The CHAIRMAN. As I understand it, all of your teaching there and training is intended to fit the men for the naval service?

Capt. GIBBONS. I think Admiral Dewey expressed that very well when he said that we are educating there a definite type of man for a definite object in life, and that both theory and practice are combined as well as we can combine them in four years; but, of course, experience comes afterwards.

The CHAIRMAN. His ability to use it?

Capt. GIBBONS. Yes, sir.

Mr. BATHRICK. Do you take any measures whatever to ascertain the courage, perseverance, and nerve of a man who enters the academy? Is it all brain work, without any consideration of a man's characteristics?

Capt. GIBBONS. No, sir; I think we try to differentiate between a man using his brain as a reservoir and as muscle. For instance, there are many men who are good in books who do not excel in other things.

Mr. BATHRICK. Do you not think there are certain characteristics of fighting men that you can not get out of the books?

Capt. GIBBONS. I do. If there is any possible way of picking out those men, of course they would be the men you want.

Mr. BATHRICK. Do you take that into consideration?

Capt. GIBBONS. We can not get at that feature easily, and you can not tell until it develops. The only standard we have is established by the experience of many years.

Mr. BATHRICK. A man who has charge of a ship should have poise, quick decision, self-control, and courage?

Capt. GIBBONS. Yes, sir; and we look for these qualities at all times, and if a midshipman shows them a note of it is made in his record. We try to give him the education there, but the great school of experience comes when he gets his commission and goes out with the fleet. He is examined for his various promotions, and he is tabbed on his courage or anything that he has done.

Mr. BATHRICK. You do not try to study a boy?

Capt. GIBBONS. We try to find out, but it is an extremely difficult thing to do. I would not say that I could assess a man's courage, because he may have lacked opportunities during the course to show that, but if he has come to the front a note is made on his record.

Mr. WITHERSPOON. The bravest men do not show it until the time to fight comes.

The CHAIRMAN. Captain, we are very much obliged to you.

(Thereupon, the committee adjourned to meet to-morrow, Friday, January 16, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,

Friday, January 16, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENTS OF MAJ. GEN. WILLIAM P. BIDDLE, COMMANDANT; COL. CHARLES L. M'CRAWLEY, QUARTERMASTER, IN CHARGE OF QUARTERMASTER'S DEPARTMENT; AND COL. GEORGE RICHARDS, PAYMASTER, IN CHARGE OF THE PAYMASTER'S DEPARTMENT, UNITED STATES MARINE CORPS.

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Gen. Biddle, Commandant of the Marine Corps.

General, I notice that in "Pay, Marine Corps," you have a proviso in new language, "*Provided*, That the increased compensation as now fixed by law for the Marine Corps for foreign shore service shall hereafter be paid to the officers and enlisted men of that corps while on sea duty, in the same manner and under the same conditions as is provided by the act approved May 13, 1908, for officers of the Navy," increasing the appropriation from \$956,598 to \$977,457. That is the same proviso which was submitted last year?

Gen. BIDDLE. Yes, sir.

The CHAIRMAN. Have you any reasons you desire to submit to the committee?

Gen. BIDDLE. We ask for it because the naval officers get it. We have a prepared statement covering that matter.

The CHAIRMAN. Very well; either state it or place it in the hearings.

Col. RICHARDS. The reasons why marines should receive sea pay may be briefly summarized, as follows:

1. From the legal point of view:

First. *Why marines do not get sea pay.*—Marines do not get sea pay because, by section 1612, Revised Statutes, their pay and allowances are to be the same as now or hereafter provided for the Infantry of the Army, which is the same for both sea and shore service. Section 1612, Revised Statutes, provides:

SEC. 1612. The officers of the Marine Corps shall be entitled to receive the same pay and allowances, and the enlisted men shall be entitled to receive the same pay and bounty for reenlisting, as are or may be provided by or in pursuance of law for the officers and enlisted men of like grades in the Infantry of the Army.

Second. *Why the Navy gets sea pay.*—The naval officers have always been provided by law with a higher rate of pay for sea service than for shore duty, on the ground of the more arduous duty and the greater expense involved in separately maintaining themselves at sea and their families ashore. The Navy's enlisted men have, for similar reasons, always enjoyed a higher rate of pay than men of corresponding grades in the Army and Marine Corps. The present law applying

to officers of the Navy is the act of May 13, 1908 (35 Stat., p. 128), which provides as follows:

All officers on sea duty and all officers on shore duty beyond the continental limits of the United States shall, while so serving, receive 10 per cent additional of their salaries and increase as above provided, and such increase shall commence from the date of reporting for duty on board ship or the date of sailing from the United States for shore duty beyond the seas or to join a ship in foreign waters.

This act further provides for an increase of 10 per cent in the pay of all enlisted men of the Navy, in terms as follows:

The pay of all active and retired enlisted men of the Navy is hereby increased 10 per cent.

The corresponding law, framed solely to meet the conditions in the Army, is the act of June 30, 1902 (32 Stat., 512), and the act of May 11, 1908 (35 Stat., 110), which provide:

Provided, That hereafter the pay proper of all commissioned officers and enlisted men serving beyond the limits of the States comprising the Union and the Territories of the United States contiguous thereto shall be increased 10 per cent for officers and 20 per cent for enlisted men over and above the rates of pay proper as fixed by law for time of peace, and the time of such service shall be counted from the date of departure from said States to the date of return thereto. (Act of June 30, 1902, 32 Stat., 512.)

That increase of pay for service beyond the limits of the States comprising the Union and the Territories of the United States contiguous thereto shall be as now provided by law. (Act of May 11, 1908, 35 Stat., 110.)

Now, those are the laws which provide for foreign shore-duty pay for the Army.

Third. *Navy pay fixed on sea basis, marines, pay on shore basis.*—From these laws it is apparent that the pay of the Navy is fixed on a sea basis, while the pay of the Marine Corps, which corresponds to that of the Infantry of the Army, is fixed on a shore basis.

Fourth. *How the law overlooked sea service of marines.*—The Congress, in revising the pay of the services in 1908 (acts of May 11 and 13, 1908), as above cited, dealt solely with the conditions of service as applied to the Army and Navy, without any special reference to the diversified conditions of service in the Marine Corps; thus, not taking into account that small portion of the corps who always serve at sea.

2. From the equitable point of view:

First. *Same pay for same rank and length of service under similar conditions only equitable basis for all the military services.*—Congress, by the acts of May 11 and 13, 1908, above cited, endeavored, as far as practicable, to place all officers of the Army and Navy of the same rank and length of service on the same footing as to pay and allowances. This was done in so far as the conditions of the two services would permit; but officers of the Navy, whose principal duty was to serve at sea, were given, in addition to the 10 per cent for foreign-service pay allowed Army officers, a similar increase for all sea duty. This was considered equitable and just as applied to the Army and Navy, though, as above stated, the sea-going marines were overlooked.

Second. *The duties of marines at sea as arduous as that of sailors.*—The marine at sea is required to perform practically all the arduous duties that a sailor performs; from scrubbing the decks and coalin- ship to manning the guns, etc.

Third. *The enlisted marines' pay is 25 to 45 per cent less than that of sailors.*—The pay of enlisted men of corresponding grades in the Navy exceeds that of similar grades in the Marine Corps by from 25 to 45

per cent. In view of the fact that marines must, as above stated, perform all of the duties of sailors, this does not appear just and equitable.

Fourth. *Sea pay of marines still less by 10 to 15 per cent than sailors.*—The pay of the enlisted men of the Marine Corps, if increased for sea service, as requested, would still be from 10 to 15 per cent less than that of sailors of corresponding grades.

Fifth. *Same pay sea and ashore.*—The marine officers and men receive the same pay at sea as they receive ashore. The pay of officers of corresponding rank and length of service in the Navy and Marine Corps is the same for shore services, but the naval officer receives 10 per cent more than the marine officer for sea service. This can not be justified on any equitable grounds.

Sixth. *Special status not desired.*—So far as the law fixing the base pay of marines the same as that of the Infantry of the Army is concerned, no change of this fundamental principle, so as to give marines a special status, is desired. It is considered just and proper that they continue to receive the same pay as the Infantry of the Army, so long as the conditions of service are the same as that of the Infantry; but for that portion of the corps required to serve at sea, where the conditions of service in no wise resemble those of the Infantry of the Army, but are more particularly allied to that of the more arduous service of the better paid sailor, it is believed just and right that this reasonable percentage of increase should not be denied to marines for sea service.

Seventh. *This palpable discrimination against marines* was evidently not intended by the Congress that framed the acts of May 11 and 13, 1908. It was its avowed purpose to correct the inequalities of former laws regarding pay in the Army and Navy, and, with the exception of marines on sea service, this purpose was admirably accomplished. Equitable considerations, therefore, appear to demand a change of the present law to accord with what would appear to have been the original intent of Congress.

3. From the point of maintaining efficiency in the corps:

First. *Officers.*—Few graduates of the Naval Academy seek commissions in the Marine Corps, on account of better chance of advancement and better pay in the Navy.

Second. *Men.*—The difference in pay is the cause of discontent and of many good men leaving the Marine Corps and enlisting in the Navy.

Third. If sea pay were provided it would encourage the best men of the corps to seek sea service by removing an important obstacle to their seeking sea service with its greater hardships and restrictions.

4. From the point of expense:

First. *Increase in appropriations.*—It would require an increase of only about 3 per cent in the total appropriations for pay Marine Corps.

Second. *Difference in pay of enlisted men.*—It would still leave the pay of the enlisted men of the Marine Corps at sea about 10 to 15 per cent less than that of the sailor of corresponding grade.

Third. *Change in the law.*—There is every reason for such a change in the law and no reason against it except the question of the slight expense.

Now, there is no special status desired for the Marine Corps, and the only purpose of this proposed law is to correct a discrimination

which existed for a long time and which it was never possible to present for the consideration of this committee until the Navy Department came to one mind with respect to the desirability and necessity from a naval standpoint of the Marine Corps serving at sea. That condition was reached in 1911 and was stated in a document then presented to this committee. I desire to explain to the committee that this matter was very fully discussed in the hearings last year, and such part of that hearing as touches this subject, I wish to file as a part of this hearing.

The CHAIRMAN. Certainly.

(The matter referred to by Col. Richards follows:)

[No. 9.]

THE COMMITTEE ON NAVAL AFFAIRS,
Wednesday, January 8, 1913.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENTS OF MAJ. GEN. WILLIAM P. BIDDLE, COMMANDANT; LIEUT. COL. CHARLES L. M'CRAWLEY, ASSISTANT QUARTERMASTER IN CHARGE OF QUARTERMASTER'S DEPARTMENT; AND COL. GEORGE RICHARDS, PAYMASTER IN CHARGE OF THE PAYMASTER'S DEPARTMENT, UNITED STATES MARINE CORPS.

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Gen. Biddle, Col. Richards, and Col. McCawley, of the Marine Corps.

General, I notice that you have inserted "one colonel, one major, five captains, one captain assistant quartermaster, six first lieutenants, and four second lieutenants," and then a proviso:

"Provided, That the increased compensation as now fixed by law for the Marine Corps for foreign shore service shall hereafter be paid to the officers and enlisted men of that corps while on sea duty, in the same manner and under the same conditions as is provided by the act approved May 13, 1908, for officers of the Navy."

And you increase the appropriation from \$936,278 to \$1,014,058. I will ask you to explain, first, the increase in the officers.

* * * * *

Col. RICHARDS. There remains a further item of increase of \$14,260, which is covered by the proviso asking that there shall be applied to the Marine Corps a provision of existing law granting to officers of the Navy sea pay. That proviso is contained in the act of May 13, 1908; it states that the officers of the Navy on sea duty and on shore duty beyond the continental limits of the United States shall, while so serving, receive 10 per cent additional pay. This is a provision exclusively for officers of the Navy. We have in the Marine Corps a foreign-service pay which is similar—a 10 per cent increase for officers serving abroad on shore duty. This was contained in the Army act of March 2, 1901, but marine officers serving at sea, serving alongside of the officers of the Navy on board ship, do not now nor have they received this sea pay for four years, that is, since the law of 1908 was passed. Marine officers' pay is regulated by Army pay; the Army does not serve afloat; in consequence, marine officers serving afloat do not receive sea pay. There is only one instance where Army officers actually serve afloat; that is, where they are actually assigned to duty on board transports, for which duty there is a specific provision of law giving Army officers foreign-service pay, but, owing to the letter of the law, the Marine Corps has never received sea pay.

Mr. BUTLER. It applies to both the Army and Navy, but not to the Marine Corps?

Col. RICHARDS. Yes, sir.

Mr. BUTLER. And if this provision of law should pass, it would give the officers of the Marine Corps the same rate that the officers of the Army and Navy now have?

Col. RICHARDS. Yes, sir. We have many instances showing the injustice that this condition works, not only directly to the marines afloat, but also and more particularly in reference to our expeditionary work. We sent this past year two expeditions, one to Nicaragua and one to Santo Domingo. Both of them expected to serve on shore; one did serve on shore, the one that went to Nicaragua. The other, on board the *Prairie*, went to Santo Domingo, and when they arrived there conditions did not actually require their landing, so, during the 72 days that they were absent from the country on board this naval transport, not an Army transport, merely because they were not landed while absent and so did not perform foreign shore service they could not receive this increased pay.

Mr. ROBERTS. Who made that ruling?

Col. RICHARDS. It was strictly in accordance with the letter of the law as interpreted by the Comptroller of the Treasury, and follows from the fact that service afloat is not recognized in the statute as service entitling the Marine Corps to foreign-service pay. And this we ask to have corrected by the enactment of the proviso inserted in the bill. The Court of Claims has made a ruling as to the purpose of foreign-service pay. They say:

"It is clear that the extra allowance provided by these statutes was intended by the Congress to apply to such officers only who may be regularly assigned to foreign posts or stations, as a compensation in part, at least, of the sacrifices and hardships they are required to endure going to, while at, and coming from such assignments."

It seems to me that an officer who goes to sea is in identically the same situation as an officer going to a foreign station. He is required during his absence to maintain his family at home as well as to maintain himself wherever he may be; Congress has recognized this condition for the past 10 years by providing extra compensation for such service. We ask only that Congress may extend this benefit to the Marine Corps.

The CHAIRMAN. Let me ask you this question with reference to that. The law with reference to the pay of the Army regulates the pay of the Marine Corps?

Col. RICHARDS. Yes, sir.

The CHAIRMAN. If this provision is inserted will it throw out of harmony the pay of the Army officers?

Col. RICHARDS. No, sir, it will not. The pay of the Marine Corps is regulated by the Army pay. Whatever is specifically provided for the Army applies also to the Marine Corps. In reference to this sea service, the Army performs no sea service except in isolated cases, and the statutes distinctly recognize that where they do perform this service in such cases they get the foreign-service pay.

The CHAIRMAN. It also provides for additional pay for foreign service on land?

Col. RICHARDS. Yes, sir; we all get additional pay there, but when it comes to the application of existing statutes to the Marine Corps, inasmuch as the service of the Marine Corps on board ship is not recognized as foreign service, no extra pay, or sea pay, is there paid to its officers and men. We frequently find cases like this: The fleet is assembled off Cuba, as it was last summer. There were marines sent down there from home, detailed for foreign shore service in Cuba, who were landed there. At the same time when the fleet arrived off Cuba some additional marines, part of the fleet's detachments, were landed.

The marine guards so landed from the ships were landed for temporary duty, that is to say, the duty ashore they so performed was considered as duty incidental to their service on board ship. These ships' detachments served right alongside marines sent from the States; they did the same duty, but they did not receive the foreign-service pay. This was due to this same condition, that the service of the Marine Corps afloat is not recognized as service outside the continental limits of the States entitling officers and men to increased pay. It is proposed by inserting this proviso that there shall be one uniform rate of pay provided for marines who so serve outside the continental limits of the United States, whether such service be ashore or afloat.

Mr. TRIBBLE. I am in entire sympathy with the Marine Corps. What are the duties of the Marine Corps?

Col. RICHARDS. The primary function of the Marine Corps is to furnish expeditionary forces in connection with naval operations and to supply marine detachments for the service afloat.

Mr. TRIBBLE. Can they man a vessel, take charge of a warship and man it?

Col. RICHARDS. The enlisted marine aboard ship performs almost every duty that a sailor performs; of course, he has no duties connected with the navigation or the steering of the ship. Such duties are never assigned to the marines on war vessels. The marines are sometimes called upon at sea to exchange duties with men of the Navy.

They have their quarters in their own part of the ship, which they themselves keep clean. They form a separate gun division, manning guns of the secondary battery and of the intermediate battery of caliber as high as the 7-inch guns. There was a time when, by reason of their distinctive military character as soldiers, they were excused from such duties as painting and coaling ships. Now, however, there is no such distinction. The marines perform every arduous duty that the sailor performs, and in addition to this they perform certain ceremonial duties when the guards are paraded. In addition to this they are stationed as sentries and orderlies about the ship. As a matter of fact it is exceptional for a marine aboard ship to have a "night in." He must do his day's work as a sailor does and then he has a broken night's rest. Under emergencies marines are sometimes detailed in the fireroom as stokers and coal passers.

Mr. ROBERTS. Emergency duty?

Col. RICHARDS. In emergencies. They are at all times required to keep up a neat appearance as soldiers. Afloat in battle they perform duties at the intermediate and secondary batteries as gun captains, gun pointers, signalmen, and so forth.

Mr. TRIBBLE. Can they perform those duties on the vessels?

Col. RICHARDS. They perform those duties on board the vessels, as gun pointers, gun captains, and signalmen. They man the guns up to the 5 and 6 and 7 inch guns; they form a distinct gun division at battle stations.

Mr. TRIBBLE. If the war vessels were short of men, if you had men in the Marine Corps they could be supplied?

Col. RICHARDS. Only under the direction of the Navy Department. In the Spanish War a shortage in the *Iowa's* complement was so supplied by increasing the marine detachment.

The CHAIRMAN. Under existing conditions they do that work now; they man the 5 and 6 inch guns?

Gen. BIDDLE. They man probably all except the turret guns. They do not man them.

Col. RICHARDS. The men of the Navy, with the exception of the anchor watch on board ship and other quartermaster's watches, get their night's rest while the marines must stand night watches in addition to the other duties they perform in common with enlisted men of the Navy. As a general rule, marines aboard ship very seldom get a whole night's rest. It might be said in general that marines perform all the duties of sailors, except those of the special branches. I am now speaking distinctly of the enlisted men of the Marine Corps. In addition they stand regular watches, night and day. While in the old days marines were regarded merely as infantry aboard ship for ceremonial and police functions, under modern conditions they are considered an important part of the fighting complement of naval vessels.

Mr. TRIBBLE. They are used first in case of war or trouble in any foreign country or at home, they are the first on the ground?

Col. RICHARDS. That represents their expeditionary duties as a naval infantry force. In the training of the marines for expeditionary duties the aim and object is to provide a mobile force of infantry ready to move at an instant's notice, and in the past 10 years it has been our practice to embark detachments for expeditionary duty within 24 hours—

Mr. BUTLER (interposing). Fully equipped?

Col. RICHARDS. Fully equipped in every way. In the performance of this expeditionary work the marines, by reason of the existing statutes, are discriminated against in the matter of foreign-service pay. We ask, through this legislation, that this be corrected.

Mr. BUTLER. A marine on shipboard is an artilleryman and on shore an infantryman?

Col. RICHARDS. Yes, sir.

Mr. BUTLER. And he is trained in both branches of the service?

Col. RICHARDS. Yes, sir.

Mr. BUTLER. Your corps is older than either the Army or Navy?

Col. RICHARDS. It was first recognized in the statute.

Mr. BUTLER. As being the oldest corps?

Col. RICHARDS. Yes, sir; in the sense I state. Congress first recognized it by passing laws creating it as an organization for service on board vessels of war.

Mr. TRIBBLE. And you can perform the service of either?

Col. RICHARDS. The enlisted men; yes, sir.

Mr. TRIBBLE. What service do they perform on shore?

Col. RICHARDS. They form a mobile infantry, located at various navy yards and stations at home and abroad. Their service at the navy yards, however, is incidental. Their main purpose, according to the policy of the Navy Department, as announced in one of the documents presented by the Secretary of the Navy to Congress last year, is this:

"This corps is primarily an adjunct of the Navy, to be used as a mobile force, stationed on board ship, in home ports, and at advance bases, always ready to act in conjunction with the Navy in preserving order beyond the territorial limits and in occupying strategic points in advance of the Army when to move the Army would occasion war. The number on shore is based on the necessary brigade organization. The number afloat provides a full detachment for each of the large ships of the fleet. Sea service is necessary to keep the corps in touch with naval conditions."

In other words their service aboard ship is necessary in order that the marine himself and the marine officer will be familiar with naval methods, and thus cooperate efficiently when formed as an expeditionary force in naval operations.

Mr. TRIBBLE. And land methods, also?

Col. RICHARDS. And make them as a land force more able to cooperate in the advanced base work. The advanced base work means this: A fleet, under modern conditions, in order to maintain itself on the sea at a distance from home, requires a base of supplies. The distance that the fleet can reach out at sea in active operations depends on the location of that base. They may have a home base, when the fleet is operating in the immediate vicinity of the coast, but should it be necessary to extend their field of operations, the fleet requires an advanced base located at a distance from the coast, which must be temporarily fortified and defended. This duty can only be performed by a force of infantry and artillery. The Marine Corps fulfills that function. Through such a service by the Marine Corps, the fleet will retain its control of the sea at a distance from home. This is known as advanced work. To perform that advanced base work efficiently it is necessary to have a mobile force, a force ready to move at the shortest notice.

Mr. MACON. An advance guard?

Col. RICHARDS. Not exactly an advance guard. An advance guard is a detachment of Infantry of all arms, located on a march well in advance of the main body. Its duty is to guard against surprise, or for purposes of security and information. The advanced base work consists of taking and holding for the fleet a base, located at a distance from home, where it may coal, repair, and replenish.

Mr. ROBERTS. I want to get the status of the enlisted man in the Marine Corps fully in my mind. At the present time if he is on board ship or stationed in this country he gets a certain rate of pay?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. If he is landed on foreign shore, he gets an increased pay?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. But the sailor in the Navy, if he is in this country, or abroad, he gets a certain rate of pay?

Col. RICHARDS. A sailor's service is distinctly recognized as a service afloat, and his rate of pay has been fixed accordingly. While I do not like to make any comparisons as to the rates of pay—

Mr. ROBERTS (interposing). Just answer my question. A sailor in the Navy gets the same rate of pay whether he is detailed on shore or at sea?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. It makes no difference whether he is in Chinese waters or down in the Chesapeake Bay?

Col. RICHARDS. No, sir; he gets the same pay.

Mr. ROBERTS. His pay is fixed?

Col. RICHARDS. He has no shore service.

Mr. ROBERTS. He gets no foreign-service pay?

Col. RICHARDS. No, sir.

Mr. ROBERTS. He gets no shore service?

Col. RICHARDS. No, sir.

Mr. ROBERTS. The purpose of this is to give the marine a status over that of the sailor?

Col. RICHARDS. The purpose is to bring the pay of the marine as nearly as possible up to the sailor.

Mr. ROBERTS. An officer of the Navy gets a certain rate of pay while on shore duty?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. And an increase at sea?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. And another rate of pay when on foreign service?

Col. RICHARDS. His sea pay and foreign-service pay are the same.

Mr. ROBERTS. The law makes a distinction in the case of the naval officer with regard to what service he is performing in the matter of his pay?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. But it makes no distinction as regards the enlisted man?

Col. RICHARDS. No, sir.

Mr. ROBERTS. As the law exists at present, it makes a distinction according to the service being performed in the pay of an officer of the Marine Corps?

Col. RICHARDS. Yes, sir; but for shore duty only.

Mr. ROBERTS. What you desire is to give the commissioned officer and the enlisted man a special status while on sea duty?

Col. RICHARDS. We ask to give them a foreign-service pay while serving aboard ship, both for the officer and for the enlisted man, and in connection with the case of the enlisted man, much as I dislike to draw comparison, it is necessary for me to invite your attention to the difference in the rates of pay enjoyed by the sailor and the marine. I do not wish to be understood as indicating a belief that the sailor's

rate of pay is too high; but I do consider that the pay a marine receives afloat is too low. Many years ago, when, by reason of his military character, the marine was relieved from certain duties performed by sailors, such as painting and coaling ship, then there was perhaps some reason for his receiving less pay than the seaman branch. This condition, however, has been corrected. I have previously indicated that he practically performs all the arduous duties that the sailor performs. Now, it seems to me no more than reasonable that his pay should be brought up to that of a sailor as near as possible. The enlisted marine's pay is Army pay, but Congress recognized during the Spanish War that under war conditions the enlisted men of the Army and Marine Corps should be paid a war pay, which was then fixed at an increase of 20 per cent. Now, the Navy is on a war footing at all times; its enlisted force, both sailor and marine, perform as arduous duties in time of peace in preparing for war as they actually do in time of war. It seems no more than right that the enlisted marine should receive the foreign-service pay serving afloat.

There are many articles of clothing not within the Government's allowance for the marine which he must procure in his service afloat, and this represents an additional expense to him. Of course, the enlisted man in the Marine Corps has a rank which corresponds with the grades of the seaman branch of the Navy. Now, as it stands, a sergeant major of the Marine Corps receives as his base pay \$45 a month.

Mr. ROBERTS. What is the base pay for the Marine Corps, the Army or Navy pay?

Col. RICHARDS. The marine receives Army pay. A sergeant major or first sergeant would receive about \$4.56 clothing allowance, making the total of \$49.56. That grade corresponds, I think, to chief master-at-arms in the Navy, who receives \$71.50 a month. If this first sergeant's rate of pay be increased 20 per cent while serving aboard ship, this would make his pay \$58.56, and this would still be materially less than that allowed the corresponding grade in the seaman branch, \$71.50.

Mr. ROBERTS. The law does not carry into the compensation of the commissioned officer and the enlisted man in the Navy the same idea with regard to an increase for sea duty or foreign service?

Col. RICHARDS. The law fixes the pay of the naval officer on a shore-duty basis, and then provides that he shall receive additional compensation for sea or foreign service. The law fixes the pay of the enlisted man of the Navy on a sea basis, since his service is almost entirely at sea and there is therefore no need for giving him additional compensation while at sea. In the case of the marine officer and man, their pay being fixed by law on a shore-duty basis, there is the same need for additional compensation as in the case of the naval officer to whom it is now given by law. The marines serve ashore and afloat; the sailor serves rarely on shore and regularly aboard ship.

Mr. ROBERTS. There is a certain number who do some shore duty, especially among petty officers and warrant officers?

Col. RICHARDS. Yes, sir; there are some at the naval training stations.

Mr. ROBERTS. And some enlisted men?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. And at the navy yards and stations?

Col. RICHARDS. But it does not run through all the grades of the enlisted force of the Navy as it does in the Marine Corps.

Mr. ROBERTS. The reason you want to take the enlisted man of the Marine Corps along with the officer in this increase of pay is because your enlisted man does serve both ashore and afloat?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. And in the ordinary discharge of his duties as a marine you think there should be a difference in his pay when afloat because he is at times obliged to go ashore?

Col. RICHARDS. Yes, sir; I think there should be a difference, but in recognition of another thing that I pointed out heretofore, that the service aboard ship is arduous service for the enlisted man of the Marine Corps, and such should be adequately compensated for. Another circumstance that must be considered is this: When we fill a ship's detachment, we pick the best men we can find to go aboard the ship, and we send them aboard the ship to perform arduous service where the rate of pay is materially less than that of a sailor's. We think it no more than fair that this foreign-service pay should be allowed to the enlisted man of the Marine Corps while serving afloat, so as to bring his pay up as nearly as possible to that of the seaman who serves right with him.

The CHAIRMAN. Please put in the hearing a statement of the pay of the enlisted seaman in the Navy and the enlisted man in the Marine Corps, so that we will have a comparison of the two.

Col. RICHARDS. Yes, sir; I will.

The statement is here attached.

Recapitulation of rates of pay (grade for grade).¹

	Marines.		Navy.	
	Present rate.	Proposed rate, 20 per cent increase sea service.	Seaman branch.	All branches.
First sergeant in charge.....	\$65.99	\$78.28	\$85.55	\$84.43
Sergeant.....	38.76	45.61	46.25	44.89
Corporal.....	29.76	34.81	38.25	36.18
Private.....	23.60	27.45	33.09	36.97

¹ The rates of pay in this comparison include, in so far as present rates of pay of both services are concerned, the longevities, extra compensations of all kinds, and bounties allowed to each.

Enlisted men of the Navy receive 4 cents per mile for travel allowance on discharge, while marines receive but 3 cents per mile or transportation, but this difference was not considered in the above rates. The rates of pay for enlisted men of the Navy are those shown on pp. 836-837, "Estimates of appropriations, 1924."

Comparative statement of pay.

[Based upon sec. 31, Navy Regulations.]

CHIEF PETTY OFFICERS.

Seaman branch.	Total pay per month.	Artificer branch.	Total pay per month.	Special branch.	Total pay per month.
Chief masters-at-arms.....	\$88.08	Chief machinist's mates.....	\$84.61	Chief yeoman.....	\$82.29
Chief boatswain's mates.....	83.00	Chief electricians.....	80.41	Hospital stewards.....	82.92
Chief gunner's mates.....	85.81	Chief carpenter's mates.....	83.14	Bandmasters.....	84.37
Chief turret captains.....	86.42	Chief water tenders.....	84.41	Chief commissary stewards.....	87.08
Chief gun captains.....	84.44				
Chief quartermasters.....					
Average pay....	85.55	Average pay.....	83.14	Average pay.....	84.22

Average pay of all petty officers (Navy), \$84.43.

Marines: First sergeant in charge of detachment, \$65.99. Average pay, \$65.99.

FIRST-CLASS PETTY OFFICERS.

Masters at arms.....	\$52.72	Machinist's mates.....	\$63.77	Musicians, first.....	\$46.68
Boatswain's mates.....	55.24	Electricians.....	59.73	Yeomen, first.....	47.06
Turret captains.....	64.27	Boiler makers.....	76.45	Commissary stewards.....	73.53
Gunner's mates.....	54.89	Coppersmiths.....	64.67	Ship's cooks.....	70.59
Gun captains.....		Blacksmiths.....	59.08	Bakers.....	54.42
Quartermaster.....	53.68	Plumbers and fitters.....	52.21		
		Sailmaker's mates.....	54.04		
		Carpenter's mates, first.....	50.56		
		Water tenders.....	51.02		
		Ship fitters.....	66.96		
		Painters.....	51.67		
Average pay....	55.22	Average pay.....	59.11	Average pay.....	58.53

Average pay of all petty officers (Navy), \$58.28 (first class).

Marines: First sergeants, \$65.99; gunnery sergeants, \$65.99. Average pay, \$65.99.

SECOND-CLASS PETTY OFFICERS.

Masters at arms.....	\$45.00	Machinist's mates.....	\$45.39	Yeomen.....	\$41.04
Boatswain's mates.....	48.61	Electrician.....	46.04	Ship's cooks.....	48.84
Gunner's mates.....	46.66	Carpenter's mates.....	40.39		
Gun captains.....		Printers.....	41.09		
Quartermasters.....	44.73	Oilers.....	46.52		
		Ship fitters.....	47.74		
		Painters.....	41.51		
Average pay....	46.25	Average pay.....	44.10	Average pay.....	44.94

Average pay, all petty officers, second class (Navy), \$44.89.

Marines: Sergeants, \$38.76. Average pay, \$38.76.

Comparative statement of pay—Continued.

THIRD-CLASS PETTY OFFICERS.

Seaman branch.	Total pay per month.	Artificer branch.	Total pay per month.	Special branch.	Total pay per month.
Masters at arms.....	\$37.38	Electricians.....	\$33.86	Yeomen.....	\$35.01
Coxswains.....	40.36	Carpenter's mates.....	33.87	Hospital apprentice.....	35.15
Gunner's mates.....	38.41	Painters.....	34.90		
Quartermasters.....	36.85				
Average pay.....	38.25	Average pay.....	34.14	Average pay.....	35.10

Average pay, all petty officers, third class (Navy), \$36.18.

Marines: Corporals, \$29.76. Average pay, \$29.76.

SEAMEN, FIRST CLASS.

Seamen gunners.....	\$36.50	Firemen, first class.....	\$41.33	Musician, first.....	\$39.39
Seamen.....	29.68			Ship's cook, third.....	35.69
				Bakers, second.....	40.03
Average pay.....	33.09	Average pay.....	41.33	Average pay.....	38.11

Average pay, seamen, first class (Navy), \$36.97.

Marines: Musicians, \$23.60; privates, \$23.60. Average pay, \$23.60.

NOTE.—Marines total pay per month includes clothing allowance.

MR. BUTLER. Two transports went on an expedition to Santo Domingo. They both tied up, one on each side of a long dock. The marines were taken off of one transport and landed, and they will get the pay under the law. The marines on the other ship were not taken off and landed, and they will not get the same pay?

COL. RICHARDS. No, sir.

MR. BUTLER. Is that statement correct?

COL. RICHARDS. Yes, sir; not only for the period that they were landed but from the time they left the United States until they return. In other words, if there are two detachments and one fulfills the purpose for which it was organized—that is, it lands—and the other does not, and they are both absent from the United States for the same period of time, one gets the foreign-service pay and the other does not.

MR. ROBERTS. Would it not be better, perhaps, to make a provision of law covering such cases as that, rather than to put the whole Marine Corps on a sea-pay basis? For instance, the marines are on ships going up and down the coast, running from one harbor to another, and while that is sea duty they are right in sight of land all the time?

COL. RICHARDS. We feel that the service marines perform afloat merits the increased compensation for that duty, as well as for foreign shore service.

MR. ROBERTS. You intend, if this becomes a law, to give those marines who are on the fleet going up and down the coast this sea-service pay?

COL. RICHARDS. Yes, sir.

MR. BUTLER. Now, they only get this pay when the marines are on foreign shores?

COL. RICHARDS. Yes, sir; we feel that their service is of such an arduous nature afloat that it entitles both the enlisted men and the officers to the same increase in compensation which has been given to the naval officers.

THE CHAIRMAN. In other words, you make foreign shore service and home sea service the same?

COL. RICHARDS. Yes, sir.

MR. ROBERTS. That is the proposition I have been trying to revolve in my mind and harmonize. The duties of the marine contemplate sea service?

COL. RICHARDS. Yes, sir; and it is arduous service.

MR. ROBERTS. He knows that when he goes into the service, and he knows what his pay is?

COL. RICHARDS. Yes, sir; sea service is an important part of his duty and so is the expeditionary work.

MR. ROBERTS. A marine when he enlists contemplates arduous sea service as part of his duties and so does the enlisted man in the Navy?

COL. RICHARDS. Yes, sir.

MR. ROBERTS. The enlisted man of the Navy can not see any shore duty ahead of him, which is a snap, so to speak, compared to the sea duty, while the marine can see

aboard of him shore duty, which is a snap to him, as compared with the hard work he does at sea. What I can not fully reconcile in my mind is the idea of picking out the marine especially and giving him this high rate of pay all the time he is at sea. I recognize the injustice of the condition that you cite of the two transports, and that I would like to correct. I think an amendment could be drawn which would give all officers and marines who are ordered on an expeditionary force into foreign waters the foreign-service pay, whether they landed or did not land, but to put the whole corps on a higher basis of pay, when a good many of them at sea just run up and down the coast, putting into a harbor over night, I can not quite reconcile.

Col. RICHARDS. Whether the ship is in a harbor or whether the ship is at sea, the marine's duty runs on just the same.

Mr. ROBERTS. I realize that.

Col. RICHARDS. The point I find it necessary to make is this: A private in the Marine Corps who goes to sea gets \$15 a month and a clothing allowance of \$4.18 a month, making \$19.18. That represents his whole compensation. A seaman gets \$26.40 a month. Now, what we ask is: Give this foreign-service pay to this private while serving on board ship, so that he would have \$22.18 a month. You are not paying him too much so long as a seaman gets as a minimum \$26.40 a month. We further ask that a corporal be given \$29.69 against a master-at-arms, third class, minimum \$33, and that a sergeant be given \$40.49 a month, against a master-at-arms, first class, minimum \$44 per month.

Now, the marine afloat, grade for grade, performs the same arduous duty the sailor performs, and for which the latter is paid the higher compensation. The marine works well aboard ship with the sailor; he does his duty to the satisfaction of naval officers generally, and I may say, on the other hand, that in those instances where the seamen or blue jackets have served ashore they work well with the marines.

A notable instance of this was told me the other day by a marine officer who had just returned from Nicaragua, where the bluejackets and marines formed a field force landed to suppress disorders there. The whole force of marines and sailors was under Admiral Sutherland. This marine officer tells me that at Nindirí, on September 19, a company of sailors had been removed from the assaulting column because their snow-white uniforms presented too favorable a target to the enemy. Learning the cause of this order these sailors removed their white clothes, rubbed them in the dust and mud until they approximated the khaki color, put them on again, and in this condition were permitted to join the marines in an attack on the rebels.

Another marine officer tells me that in the big fight there, the attack on Coyotepe Hill, a bluejacket from the *California*, a petty officer, carrying the colors, was one of the first with the marines to reach the enemy's trenches at the top. Now, this particular bluejacket was a master-at-arms—prior to his enlistment in the Navy he had served in the Marine Corps. At heart he was a soldier, though he had left the marines to serve in the Navy, where the pay was higher. This brings me to the point I would here make—these picked men of the Marine Corps, who are selected to serve afloat, we wish to keep in the corps. We ask better pay for them in their service afloat, not only in common justice to them, but also in the interest of military efficiency. We wish to hold on to them, for their continuous service in the corps makes for its efficiency as a fighting force; to do this we must ask the help of this committee. Give them this increase of pay for their service afloat.

Mr. ROBERTS. If it is on the basis that they are underpaid for the services rendered, I can see some harmony.

The CHAIRMAN. What proportion of the time does the marine spend ashore, taking it through a period of enlistment?

Col. RICHARDS. That would be rather hard to answer. We have seventy-odd officers and 2,600 marines serving on board ship, and of course the number is increasing right along.

Mr. ROBERTS. About one-quarter?

Col. RICHARDS. Yes, sir.

Mr. ROBERTS. They spend about one-quarter of their enlistment at sea?

Col. RICHARDS. Yes, sir. I suppose that may be the average; but as a matter of fact there are plenty of cases of marines serving three years aboard ship and then only one year ashore. If it could be distributed around it would be about one-quarter of the time.

Gen. BIDDLE. If a marine goes aboard ship he stays there two and one-half years. The marine who goes to the foreign service stays two and one-half years. Probably one man will go on a tour of foreign service, and another will go on sea service. When they get aboard ship, after learning their gun drill, and all that, they must stay there.

Mr. STEPHENS. Is it not true that a marine officer at sea draws less money and commutation than when serving on land?

Gen. BIDDLE. Yes, sir. They get no allowance when aboard ship. When serving on shore they get an allowance for quarters or else quarters in kind, and they get the fuel in kind or commutation, and they get light or commutation therefor, which they do not get at sea.

Mr. STEPHENS. You are only asking for them what the other branches of the service are enjoying at present?

Gen. BIDDLE. Yes, sir. A naval officer afloat gets his 10 per cent increase, but the marine officer in the same mess with him does not get it.

Mr. STEPHENS. He not only does not get the increase, but he does not get as much money as he gets when on land?

Gen. BIDDLE. No.

The CHAIRMAN. When at sea the enlisted man gets his rations, does he not?

Gen. BIDDLE. Yes, sir; the enlisted man does, but the marine officer does not.

The CHAIRMAN. This provides for the officers and men both, but, as a matter of fact, the enlisted man when at sea gets his rations supplied by the Government.

Gen. BIDDLE. Yes, sir; the same as the bluejacket.

The CHAIRMAN. And then he gets his quarters aboard ship and the heat and light that is on the ship?

Gen. BIDDLE. The enlisted man does.

The CHAIRMAN. The provision submitted includes officers and men both, an increase of 10 per cent?

Col. RICHARDS. Ten per cent for the officers and 20 per cent for the men. Last year in the hearing, all of which is filed with this record, it was pointed out that not only was this asked on equitable grounds to correct a discrimination but it really was intended to promote the military efficiency of the Marine Corps.

Mr. HENSLEY. Have you any serious difficulty in securing the best talent for the work under the present conditions?

Col. RICHARDS. I was just coming to that. Now, the marine corps at present is full.

Gen. BIDDLE. We were 27 short yesterday; it is practically full.

Col. RICHARDS. In sending men to sea the Marine Corps picks its good men—I mean of the enlisted men. These men go aboard ship, where they find that their duties are as arduous as those of the sailor, while the sailor enjoys a higher rate of pay. Now, the result of that is that we lose a great many men; they do not reenlist in the Marine Corps. Many of these men reenlist in the Navy. Of course, that in a way increases the efficiency of the seaman's branch of the Navy, but we really believe that we ought to keep our most experienced and capable enlisted marines in the Marine Corps. It is naturally in the interest of the military efficiency of the corps that this discrimination should be corrected as far as possible.

Mr. HENSLEY. Have you any idea of the per cent of those who drop out of the Marine Corps and enlist in the Navy?

Col. RICHARDS. Last year particularly this attracted my attention because the Nicaragua affair was very fresh in our minds. There was a seaman in that affair who had particularly distinguished himself in going up Coyotepe Hill. He was one of the first to reach the top. It was found that originally he had been a marine and had gone into the master-of-arms branch of the service, the seaman branch, largely

because, I suppose, of its attractiveness in the way of higher pay. I would not venture to give statistics, but I have no doubt there are quite a number of them who drop out of the Marine Corps and reenlist in the seaman branch.

Mr. HENSLEY. Are there any other instances besides that?

Col. RICHARDS. In my own experience I have found numerous cases. In the Spanish War, when I joined the *Newark* at Norfolk, a first sergeant who had been at the barracks and who had just been discharged enlisted in the yeoman branch of the Navy to take a clerical position, and was assigned to the *Newark* as yeoman. Another instance occurred on the *Enterprise* in 1891. There a corporal of marines secured a discharge prior to the expiration of his enlistment and was immediately reenlisted as a master-at-arms. A further case in my own observation occurred on the *Boston* in 1893; there, similarly, a corporal of marines secured a discharge on settlement of accounts and immediately reenlisted on board the same ship in the yeomen's branch. I venture to say that other officers can recall a number of similar instances.

Gen. BIDDLE. The first ship I was on the first sergeant, when his enlistment expired, went from the Marine Corps and became a master-of-arms. He was a most capable first sergeant and we wanted to keep him.

Mr. HENSLEY. Under the present conditions will not your arm of the service compare favorably with these other arms of which you speak?

Col. RICHARDS. We think so and hope so.

Mr. HENSLEY. There is not very much doubt about that in your mind?

Col. RICHARDS. No, sir; not in my mind.

Mr. WITHERSPOON. Do you not claim and really believe that the Marine Corps is the best and highest grade of all the branches?

Col. RICHARDS. I think that it would be better for some other person to say that. We naturally take a great pride in our corps.

The CHAIRMAN. I will say that Col. Goethals in a hearing before the committee a year ago stated that the Marine Corps on the Isthmus were the highest class of military men he had.

Mr. WITHERSPOON. If the Marine Corps are paid less than the men in the Navy are paid and the marines are more valuable, the logic of it would be to reduce the pay of the men in the Navy?

Col. RICHARDS. Last year I discussed that very point. We do not make the claim that the Navy rate of pay is too high; we think the Marine Corps is too low.

Mr. WITHERSPOON. If you admit that the pay in the Navy is not too high, then I concede that you are logical.

Col. RICHARDS. There is this condition which doubtless explains it. During the Spanish War, recognizing war conditions, the pay of the Army and Marine Corps was raised 20 per cent, but not the Navy. Now, in the Navy the seamen actually work under war conditions at all times; they are training for war; their duties are as arduous as in time of war. I think, in recognition of that condition, their rate of pay has been made higher, and it ought to remain so. That is to say, the seaman branch. Their service to-day, in time of peace, is as arduous as it is in time of war.

Mr. GRAY. Is there any trouble in securing sufficient men at these wages?

Gen. BIDDLE. The corps is full and has been for some time. They do not like the sea service as well as shore duty, and we think they are entitled to a little more pay at sea.

Mr. GRAY. If the corps is full it would not be on account of the insufficiency of the men, and you would not want to raise the wages if the men are efficient and you have all you want?

Gen. BIDDLE. We would like to make them more so.

Col. RICHARDS. It is not so much a question of numbers as it is a question of quality in the personnel that is wanted. Our main object is to develop the quality to the very highest degree.

Mr. GRAY. I understand that you believe the men of the Marine Corps are of the highest efficiency in the Navy?

Col. RICHARDS. We do not wish to draw any comparison as between the marines and the sailors, but we believe that it would be truly in the interest of the naval service as a whole if the rate of pay of the marines aboard ship were brought up by the law proposed as near as possible to that of the sailors, grade for grade. As I mentioned a moment ago, I think even this law will make, in many instances, the marines' rate of pay 25 to 45 per cent below that of the corresponding grades in the seaman's branch.

Mr. WITHERSPOON. Assuming that the marines are entitled to increased pay, have you ever considered the question as to whether or not the American people, who are paying over a billion dollars a year now to run the Government, are able to pay what the marines should have?

Col. RICHARDS. That deals with a phase of the situation which does not come under us.

Mr. WITHERSPOON. Do you not think that a Congressman should consider it?

Col. RICHARDS. Indeed, I do. We state the military necessities of the Marine Corps, and we expect, of course, that our desires in that connection are to be considered in connection with the situation of the country at large.

Mr. HENSLEY. I will say that it is stated that the expenses of this corps have multiplied more than 10 times in less than 30 years. If it is any criterion for us to judge the future by the past, you can imagine what the expense of the corps will be 30 years hence.

Col. RICHARDS. I venture to say that if those expenses could be analyzed it would be found that the expense of the enlisted men does not represent all the factors in that problem.

Mr. WITHERSPOON. You are right about that. If you could get them to cut out all the useless and criminal waste that we are making of the people's money for other things, I would agree to vote right now to increase your wages to anything you suggested; but the point of fact about it is that we are spending \$10 for every man, woman, and child in the United States to run the Federal Government, when we are spending about \$2.50 a head to run a State government which renders a great deal more service to the people than the Federal Government; we are spending about four times as much per head to run this Government, which does not render a hundredth part of the service to the people that a State government does. In view of that extravagance, ought we not to stop somewhere?

Col. RICHARDS. But it seems to me that we might stop somewhere short of reaching this department.

Mr. WITHERSPOON. I would like to stop pensions, for instance, battleships, and other things that I consider useless. I would rather give the money to the men who perform the service; but when you spend all the money for useless things, you have not any left to spend for what is useful.

Col. RICHARDS. This question of sea pay bears relation to the figures which are in the item "pay of officers," and also in the item "pay of enlisted men," which I wish to explain.

Some confusion has obtained in connection with a revision of these estimates in conformity with instructions issued by the Navy Department. It was suggested in the beginning, in conformity with a proposition from the Navy Department, that the estimate as submitted by the Marine Corps, covering "Pay, Marine Corps," be reduced by \$150,000; that this was practicable provided there be eliminated the provision for "sea pay" and its corresponding estimate for both officers and men, as well as a slight increase proposed in the pay of the civil force. This answer must have been misunderstood, for the orders were received from the Secretary that the estimates as submitted, of \$4,641,562.78, be reduced to a figure \$150,000 below the amount appropriated for 1914, viz, \$4,503,296.78, or, in other words, to the amount, \$4,353,296.78. But the proposed law authorizing sea pay was retained, while its corresponding estimate was cut out. This reduction, therefore, was in fact a reduction of the difference between \$4,491,562.78 and \$4,353,296.78, viz, \$138,266 plus the amount contained in the estimates as submitted as necessary for sea pay, namely, \$136,260, making a total reduction of \$274,526. It is very much feared that should appropriation be made according to the estimates now before the committee a deficiency may result when all the accounts are cast up at the end of the fiscal year to which the appropriations pertain, namely, the fiscal year 1915. It is not my desire or wish to propose that appropriation be made for "Pay, Marine Corps," in any sum or amount or in any detail different from what has been proposed or approved by the Navy Department. It is my duty, however, merely to call attention here to the fact that I believe that some misunderstanding has arisen. Should the committee, on its own account, intend to submit appropriation in any different form or in any different amounts than now contained in these estimates, it seems to me that this information is important in that connection. Should it be the purpose to change or modify any items of "Pay, Marine Corps," it may be stated that the item for pay of officers as prescribed by law on the active list, if the sea-pay provision is left out, might be reduced by the sum of \$14,260 on that account. Further, in this item, as submitted to the Navy Department, appropriation was suggested for foreign-service pay of approximately 71 officers on shore duty abroad. Under a more recent distribution of the Marine Corps, adopted since these estimates were submitted, the number of officers now expected to be on foreign service during the fiscal year 1915 is but 40. This item of "Pay of officers on the active list" may, therefore, be now further reduced by the difference in foreign-service pay due to this reduced number of officers, which is in the sum of \$11,557. In other words, it seems proper, in the discretion of the committee, that the item of pay of officers might be, in the light of subsequent events, reduced by the sum of \$11,557 plus \$14,260, or in all \$25,817. That would make this item \$951,640

instead of \$977,457, as in the approved estimates. This reduction is suggested on the distinct understanding that the sea-pay provision is not to remain in the bill. The estimate for that is in draft No. 1. If it is out it means that reduction.

Mr. WITHERSPOON. Here is an increase of about \$20,000 in this item?

Col. RICHARDS. Yes, sir.

Mr. WITHERSPOON. I do not know what you base that on. How do you know whether the marines during the year beginning the 1st of July, 1914, will be engaged in any sea service, and if so, how much?

Col. RICHARDS. We can only estimate that from past experience and upon the information as to the policy of the Navy Department. The rate of pay of every officer is fixed by law. The number of officers allowed the Marine Corps is fixed by law. It is true that the distribution of the corps is a matter of regulation of the Navy Department, but in times past the variable factor has been the foreign-service pay. We have so many officers on foreign service and that represents a certain amount which we always put in. Recently they ordered a reduction of the number of officers abroad, and I have suggested that this item of their foreign-service pay could be reduced.

Mr. WITHERSPOON. I would like to ask you, does that law provide that this increased pay be dependent entirely upon whether they are actually on sea service?

Col. RICHARDS. Actually on foreign-shore service. As it is now we have a law allowing officers 10 per cent increase of pay while on foreign-shore service, that is to say, in the Philippines, Guam, and Peking. Those are the only stations where the officers receive foreign-service pay. There have been 70 officers heretofore serving there, and now orders have been issued that the number be reduced to 40.

The CHAIRMAN. Did you have an unexpended balance in the \$956,598 appropriated last year?

Col. RICHARDS. I have a statement for the fiscal year ending June 30, 1913, of what was expended in each one of these items. In this item we expended \$934,691.84. There was appropriated for that year \$936,278, leaving unexpended \$1,586.16.

The CHAIRMAN. And for the current year do you anticipate having an unexpended balance?

Col. RICHARDS. We can not tell; in reality we never know until the year has closed just exactly what has been expended.

The CHAIRMAN. The next item is "For pay of officers prescribed by law, on the retired list." That is a mathematical calculation?

Col. RICHARDS. It is purely a mathematical calculation and but few changes are made due to the natural changes in the retired list.

The CHAIRMAN. Did you have any unexpended balance in the \$181,677 appropriated last year?

Col. RICHARDS. The expenditure for this item as shown in the statement before referred to is \$180,809.73. There was appropriated \$177,552.50; we exceeded on this item \$3,257.23.

The CHAIRMAN. The next item, "Pay of enlisted men, active service," is a mathematical calculation also. You have reduced that item, I see, from \$2,900,000 to \$2,700,000.

Col. RICHARDS. I desire to file the details of the calculations covering the entire estimate for "Pay, Marine Corps," as part of this

hearing, together with the order of the Navy Department dated October 6, 1913.

(The order, etc., referred to by Col. Richards follows:)

NAVY DEPARTMENT,
Washington, October 6, 1913.

To: Major General Commandant, United States Marine Corps.
Subject: Estimates, 1915, Paymaster's Department.

The department returns herewith the preliminary estimates of the Paymaster's Department, United States Marine Corps, for preparation, in duplicate, on the regular estimate and comparative statement sheets.

No increases in the pay of the civil force are authorized.

The final estimates will show a net decrease over the appropriations for 1914 of \$150,000, to be deducted from such appropriations under the "Paymaster's Department" as you may prefer.

Authority is granted to include under "Pay, Marine Corps," the provision shown on the preliminary estimates for increased compensation for officers and men while on sea duty.

With respect to the other change in phraseology recommended, the language appearing in the current act will be followed, viz, "in the Quartermaster's Department, for duty where their services are required, four clerks, at \$1,400 each."

The final estimates must be in the department's hands at the earliest practicable moment, as they are to be in the President's hands by the 10th instant, and must first be verified and recapitulated.

The instructions contained in the department's circular letter of April 24, 1913, with respect to estimates, should be strictly complied with.

(Signed) F. D. ROOSEVELT

MEMORANDUM TO ACCOMPANY ESTIMATES, PAY, MARINE CORPS, 1914-15.

Pay of officers—Line and staff.

ACTIVE LIST.

Number.	Rank.	Rates.	Amounts.
1	Major general commandant.....	\$8,000	\$8,000.00
11	Colonels, line and staff.....	4,000	44,000.00
12	Lieutenant colonels, line and staff.....	3,500	42,000.00
28	Majors, line and staff.....	3,000	84,000.00
107	Captains, line and staff.....	2,400	256,800.00
96	First lieutenants, line.....	2,000	192,000.00
90	Second lieutenants, line.....	1,700	153,000.00
345	.....		779,800.00

ADDITIONAL PAY FOR LENGTH OF SERVICE.

1	Major general commandant.....		
10	Colonels, over 20 years.....	\$1,000	\$10,000.00
1	Colonel, over 15 years.....	1,000	1,000.00
11	Lieutenant colonels, over 20 years.....	1,000	11,000.00
1	Lieutenant colonel, over 15 years.....	1,000	1,000.00
14	Majors, over 20 years.....	1,000	14,000.00
13	Majors, over 15 years.....	900	11,700.00
1	Major, over 10 years.....	600	600.00
3	Captains, over 20 years.....	960	2,880.00
37	Captains, over 15 years.....	720	26,640.00
66	Captains, over 10 years.....	480	31,680.00
1	Captain, over 5 years.....	240	240.00
24	First lieutenants, over 10 years.....	400	9,600.00
72	First lieutenants, over 5 years.....	200	14,400.00
2	Second lieutenants, over 10 years.....	340	680.00
23	Second lieutenants, over 5 years.....	170	5,610.00
55	Second lieutenants, under 5 years.....		
345	.....		141,030.00

Pay of officers—Line and staff—Continued.

10 PER CENT ADDITIONAL PAY FOR FOREIGN SERVICE.

Number.	Rank.	Rates.	Amounts.
1	Colonel, over 20 years.....	\$500	\$500.00
2	Lieutenant colonels, over 20 years.....	450	900.00
3	Majors, over 20 years.....	400	1,200.00
3	Majors, over 15 years.....	390	1,170.00
8	Captains, over 15 years.....	312	2,496.00
14	Captains, over 10 years.....	288	4,032.00
7	First lieutenants, over 10 years.....	240	1,680.00
17	First lieutenants, over 5 years.....	220	3,740.00
7	Second lieutenants, over 5 years.....	187	1,309.00
9	Second lieutenants, under 5 years.....	170	1,530.00
.....	For foreign expeditionary service.....		3,008.00
71	.....		21,557.00

MISCELLANEOUS ITEMS.

2	Captains, additional as aides.....	\$200.00	\$400.00
7	Captains, additional pay for providing mounts.....	150.00	1,050.00
4	First lieutenants, additional pay for providing mounts.....	200.00	800.00
5	Paymasters' clerks.....	1,125.00	5,625.00
	Increase for length of service.....		3,250.00
	Gratuities to widows and beneficiaries.....		3,600.00
2	Captains, additional for aviation duty.....	1,008.00	2,016.00
4	First lieutenants, additional for aviation duty.....	840.00	3,360.00
2	Second lieutenants, additional for aviation duty.....	654.50	1,309.00
26	.....		20,810.00

SUMMARY.

Officers, active list:			
Pay, base.....		\$779,800	
Pay, longevity.....		141,030	
Pay, foreign service.....		21,557	
Pay, miscellaneous items.....		20,810	
			\$963,197
Additional pay, sea service, officers (submitted):			
2 majors, over 20 years, at \$400.....		800	
1 major, over 15 years, at \$390.....		390	
23 captains, over 10 years, at \$288.....		6,624	
14 first lieutenants, over 5 years, at \$220.....		3,080	
19 second lieutenants, under 5 years, at \$170.....		3,230	
Increase to cover those who may be ordered on sea service.....		136	
			14,200
Total.....			977,457

Pay of officers.

RETIRED LIST.

Number.	Rank.	Rates.	Amounts.
3	Major generals.....	\$4,000.00	\$12,000.00
5	Brigadier generals.....	4,500.00	22,500.00
7	Colonels.....	3,750.00	26,250.00
7	Lieutenant colonels.....	3,375.00	23,625.00
5	Majors.....	3,000.00	15,000.00
3	Do.....	2,925.00	8,775.00
1	Major.....	2,700.00	2,700.00
1	Do.....	2,475.00	2,475.00
2	Captains.....	2,520.00	5,040.00
2	Do.....	2,340.00	4,680.00
6	Do.....	2,100.00	12,600.00
6	Do.....	1,980.00	15,840.00
2	First lieutenants.....	2,100.00	4,200.00
1	First lieutenant.....	1,950.00	1,950.00
1	Do.....	1,800.00	1,800.00
6	First lieutenants.....	1,650.00	9,900.00
3	Do.....	1,500.00	4,500.00
1	Second lieutenant.....	1,785.00	1,785.00
3	Second lieutenants.....	1,275.00	3,825.00
1	Paymaster's clerk.....	1,687.50	1,687.50
	Increase to cover officers who may be retired, and those retired who may be assigned to active duty.....		5,000.00
67			186,492.50

Pay of enlisted men.

ACTIVE LIST.

Number.	Rank.	Rates.	Amounts.
12	Sergeants major.....	\$540	\$6,480.00
79	Quartermaster sergeants.....	540	42,000.00
1	Drum major.....	540	540.00
114	First sergeants.....	540	61,800.00
86	Gunnery sergeants.....	540	46,440.00
480	Sergeants.....	360	172,800.00
897	Corporals.....	252	226,044.00
124	Drummers.....	180	22,380.00
124	Trumpeters.....	180	22,380.00
7,942	Privates.....	225	1,420,500.00
1	Leader of band.....	2,000	2,000.00
1	Second leader of band.....	900	900.00
30	First-class musicians.....	720	21,600.00
30	Second-class musicians.....	600	18,000.00
9,921			2,073,224.00

CONTINUOUS SERVICE.

4,591	Serving in first enlistment period.....		
15	Serving in second enlistment period.....	\$48	\$720.00
2,996	Do.....	36	107,856.00
60	Serving in third enlistment period.....	96	5,760.00
985	Do.....	72	70,920.00
47	Serving in fourth enlistment period.....	144	6,768.00
152	Do.....	108	16,416.00
473	Do.....	84	39,732.00
49	Serving in fifth enlistment period.....	192	9,408.00
107	Do.....	144	15,408.00
97	Do.....	96	9,312.00
43	Serving in sixth enlistment period.....	240	10,320.00
42	Do.....	180	7,560.00
29	Do.....	108	7,560.00
69	Serving in seventh enlistment period.....	288	19,008.00
69	Do.....	216	14,688.00
69	Do.....	120	7,200.00
9,921			241,696.00

Pay of enlisted men—Continued.

FOREIGN-SERVICE PAY.

Number.	Rank.	Rates.	Amounts.
2,084	At an average increase per annum of \$50.....		\$104,200.00
	For foreign expeditionary service.....		10,000.00
			114,200.00

INCREASE FOR LENGTH OF SERVICE, ETC., FOR MEMBERS OF BAND.

1	Leader of band.....	\$800	\$800.00
1	Second leader of band.....	288	288.00
68	Additional, act August, 1886.....	48	3,264.00
70			4,352.00

PAY—GENERAL COURT-MARTIAL PRISONERS.

270	General court-martial prisoners.....	\$180	\$48,600.00
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TRAVEL ALLOWANCE ON DISCHARGE.

2,294	At an average each of about \$25.....		\$57,350.00
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MISCELLANEOUS ITEMS.

	For special assignments:		
30	Mess sergeants.....	\$72.00	\$2,160.00
45	Cooks, first class.....	120.00	5,400.00
25	Cooks, second class.....	96.00	2,400.00
20	Cooks, third class.....	84.00	1,680.00
10	Cooks, fourth class.....	60.00	600.00
330	Messmen.....	60.00	19,800.00
20	Signalmen.....	36.00	720.00
10	Assistant Navy mail clerks.....	180.00	1,800.00
20	Gun captains.....	60.00	1,200.00
2	Intermediate gun pointers, first class.....	96.00	192.00
12	Intermediate gun pointers, second class.....	48.00	576.00
65	Secondary gun pointers, first class.....	48.00	3,120.00
70	Secondary gun pointers, second class.....	24.00	1,680.00
	For proficiency:		
575	Expert riflemen.....	60.00	34,500.00
2,800	Sharpshooters.....	36.00	100,800.00
1,200	Marksmen.....	24.00	28,800.00
	For good conduct:		
2,600	Good-conduct medals and bars.....	9.96	25,896.00
	Noncommissioned officers on recruiting duty:		
125	Sergeants (difference in pay, private and sergeant).....	180	22,500.00
100	Corporals (difference in pay, private and corporal).....	72	7,200.00
45	Difference in continuous-service pay.....	24	1,080.00
	Gratuities:		
50	To widows and dependent relatives of deceased enlisted men.....	150	7,500.00
300	Bounty for reenlisting.....	56	16,800.00
	Prizes for excellence in gunnery practice.....		7,200.00
			293,604.00

SUMMARY.

Enlisted men, active list:	
Pay, base.....	\$2,073,224.00
Pay, increase continuous service.....	348,638.00
Pay, increase for foreign service.....	114,200.00
Pay, increase for length of service in band.....	4,352.00
Pay, general court-martial prisoners.....	48,600.00
Traveling allowance on discharge.....	57,350.00
Traveling expenses of clerks.....	1,000.00
Interest on deposits.....	10,000.00
Miscellaneous items.....	293,604.00
	2,850,968.00
Additional pay, enlisted men, sea service (submitted): 2,417, at an average per annum of \$50.....	122,000.00
	3,072,968.00

Pay of enlisted men—Continued.

RETIRED LIST.

Number.	Rank.	Rate.	Amount.
4	Sergeant majors.....	\$810	\$3,240.00
26	Quartermaster sergeants.....	810	22,680.00
1	Drum major.....	810	810.00
26	First sergeants.....	810	29,160.00
27	Gunnery sergeants.....	810	21,870.00
63	Sergeants.....	621	39,123.00
15	Corporals.....	540	8,100.00
16	First-class musicians.....	729	11,664.00
1	Drummer (1 fifer).....	414	10,764.00
1	Trumpeter (23 privates).....		
			147,411.00

FOR UNDRAWN CLOTHING.

2,864	Men to be discharged at an average of \$42 each.....		\$120,000.00
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MILEAGE.

.....	For mileage to officers.....		\$55,000.00
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COMMUTATION FOR QUARTERS.

.....	For commutation for quarters to officers.....		\$42,000.00
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PAY OF CIVIL FORCE.

Office of the major general commandant:			
1	Chief clerk.....	\$2,000.00	\$2,000.00
1	Clerk.....	1,400.00	1,400.00
1	Messenger.....	971.28	971.28
			4,371.28
Paymaster's Department:			
1	Chief clerk.....	2,000.00	2,000.00
1	Clerk.....	1,500.00	1,500.00
1	Do.....	1,200.00	1,200.00
			4,700.00
Adjutant and Inspector's Department:			
1	Chief clerk.....	2,000.00	2,000.00
1	Clerk.....	1,500.00	1,500.00
1	Do.....	1,400.00	1,400.00
1	Do.....	1,200.00	1,200.00
			6,100.00
Quartermaster's Department (headquarters):			
1	Chief clerk.....	2,000.00	2,000.00
1	Clerk (increase \$300 submitted).....	1,800.00	1,800.00
3	Clerks (1 additional in lieu of 1 at \$1,200 omitted).....	1,400.00	4,200.00
1	Clerk (1 omitted).....	1,200.00	1,200.00
1	Draftsman.....	1,800.00	1,800.00
Office of the assistant quartermaster, San Francisco, Cal.:			
1	Chief clerk.....	1,800.00	1,800.00
Office of the assistant quartermaster, Philadelphia, Pa.:			
1	Chief clerk.....	1,800	1,800.00
1	Clerk (submitted).....	1,500	1,500.00
1	Messenger.....	840	840.00
For duty where their services are required:			
5	Clerks (1 additional submitted).....		8,125.00
			25,065.00
	Total civil force.....		40,236.23

Summary of all estimates.

PAY MARINE CORPS, 1914-15.

	Estimates, 1915.	Appropriated, 1914.
Pay, officers, active list.....	\$963,197.00	\$956,596.00
Pay, officers, retired list.....	186,492.80	181,677.50
Pay, enlisted men, active list.....	2,959,966.00	2,966,076.00
Pay, enlisted men, retired list.....	147,411.60	180,789.00
Undrawn clothing.....	130,000.00	125,478.00
Mileage.....	55,600.00	55,000.00
Commutation for quarters.....	42,000.00	42,000.00
Pay, civil force.....	40,236.26	35,711.28
	4,605,302.78	4,803,266.78
Pay, officers, active list, increase for sea service (submitted).....	14,260.00	
Pay, enlisted men, active list, increase for sea service (submitted).....	122,000.00	
	4,641,562.78	

**PAYMASTER'S DEPARTMENT,
HEADQUARTERS MARINE CORPS.**

Col. RICHARDS. Now, in connection with these reductions I have a statement to make.

As shown by the memorandum heretofore submitted in the estimates as laid down before the Navy Department, there was included in the Marine Corps calculations for pay of enlisted men, active list, the sum of \$3,072,966. This included an item of \$122,000 for sea pay for enlisted men. If that item for sea pay is not to remain in the bill, this original estimate of \$3,072,966 ought to be reduced by the sum estimated for sea pay, \$122,000, leaving \$2,950,966, which is an increase of \$161,741 over the sum approved for this purpose by the Navy Department which included the law authorizing sea pay, viz, \$2,789,225. Since the calculations were prepared and laid before the Navy Department with these estimates, the number of enlisted men on foreign service enjoying foreign-service pay have been reduced under recent policy from about 2,084, as heretofore calculated, to about 1,100 men. For this reason a reduction of \$59,200 in the foregoing figure of \$2,950,966 will follow, leaving \$2,891,766. In these calculations as submitted to the Navy Department there was included for continuous service pay the sum of \$348,636. These figures were prepared last fall upon anticipated conditions in the service to obtain for the fiscal year to which the appropriation belongs. More recently data has been taken as to the number of men now in the service who are actually drawing continuous-service pay. The number of men drawing continuous-service pay varies at all times, sometimes there are more in the service and sometimes there are less. In the past five years this item has been as high as \$348,000 and as low as \$268,000. The actual number of men in the service serving in the various enlistment periods which entitle them to continuous-service pay is shown in a report herewith, dated December 11, 1913. The continuous-service pay necessary for this stated number is \$288,316. It is probable that this amount may be sufficient for the fiscal year to which this appropriation belongs. Accordingly upon this theory it is suggested that the foregoing figure of \$2,891,766 may be reduced on this account by \$60,320, making the result \$2,831,446. In a similar manner the number of expert riflemen, sharpshooters, and marksmen, as it is

anticipated will obtain during the fiscal year which this appropriation belongs, has been compared with the number of expert riflemen, sharpshooters, and marksmen actually in the service, according to the latest reports, and this method has similarly been extended to include holders of good-conduct medals and noncommissioned officers on the recruiting service. The net result of a comparison of the anticipated conditions for 1915 with the actual present conditions according to the latest reports, leads me to suggest that this figure of \$2,831,446, as thus far reduced by reason of foreign-service pay, continuous-service pay, may, in the discretion of the committee, safely be reduced by a further sum on these accounts of \$24,230.92, leaving for pay of enlisted men, active list, \$2,807,215.08 instead of \$2,789,225, as now set forth in draft No. 1.

It has been my effort in this revision to bring the result as near the amount fixed by the department as possible, bearing in mind a natural desire that no deficiency will obtain for the year to which this appropriation belongs. These items of continuous-service pay, foreign-service pay, etc., past experience has shown to vary about as follows:

Mess sergeants, cooks, messmen: This item does not vary much. It increases with the number of expeditionary forces sent out, but if none are sent it remains generally a fixed quantity. Gun captains: There has been an increase during the past nine months of 120 per cent. This is due to the fact that the gun captains were never before authorized for the corps, at least the rate of pay was never authorized. There has been a considerable increase in the number of men qualified and entitled to receive that pay. On the other hand, where we have heretofore had gun pointers who really performed duties similar to that of gun captains, there has been a decrease in the past nine months of about 12 per cent. Signal men: That depends on the number of expeditions sent in the field. The increase for the last year was 90 per cent. Expert riflemen: There has been an approximate increase of 22 per cent in two years. Sharpshooters: There has been an increase in two years of 68 per cent. Marksmen, there was an approximate increase last year of 8 per cent. Good conduct medals: There was an increase of 20 per cent. I may state that these forms of extra compensation are all given for a particular object. Take, for instance, the expert riflemen and marksmen; since that pay was authorized by Congress there has been a development of target practice in the Marine Corps, so that now 44 per cent of the enlisted force of the Marine Corps are qualified as expert riflemen, sharpshooters, and marksmen. It is money wisely spent, for one company of qualified marksmen would be worth about four or five companies of unqualified men.

Gen. BIDDLE. The number of qualifications has doubled within the past two years.

Mr. WITHERSPOON. That is the whole thing in war—the men who can hit?

Gen. BIDDLE. Yes, sir.

The CHAIRMAN. If the sea pay is allowed, what should this figure be?

Col. RICHARDS. If the sea pay is to be allowed, then this figure should be \$2,929,215.08.

The CHAIRMAN. That is, with the sea pay?

Col. RICHARDS. Yes, sir.

The CHAIRMAN. What would it be without the sea pay?

Col. RICHARDS. \$2,807,215.08.

Mr. WITHERSPOON. I do not understand that. Without the sea pay you say that the amount should be \$2,807,215.08. How much more is that?

Col. RICHARDS. The sea pay amounts to \$122,000.

Mr. WITHERSPOON. You say that if we strike out the sea pay, then this item should be increased but \$20,000? The sea pay, as I understood it a while ago, just increased the appropriation \$20,000?

Col. RICHARDS. \$14,260 for sea pay for the officers and \$122,000 for the men, but in the revision of these estimates in the department there was some confusion, and that figure, \$2,789,225, does not correspond to the legislative purpose as laid down in the text of the bill.

The CHAIRMAN. You have revised the figures that make up the \$2,789,000, and it results in an increase to \$2,807,000 on account of the changes suggested?

Col. RICHARDS. Yes, sir.

The important point in connection with this is that pay of enlisted men, active list, contains an amount insufficient to cover the proposed sea pay. If the sea pay is to be allowed, then this figure of \$2,807,215.08 should be increased by \$122,000, or to \$2,929,215.08, and the pay of officers, active list, \$951,640, should be increased by \$14,260, or to \$965,900, which would make a total in all for the entire appropriation, if subsequent items remain as in the estimates, of \$4,481,729.86. If, on the other hand, the decision relative to sea pay is adverse, then the total should be \$4,345,469.86.

The report showing actual conditions as to men drawing continuous-service pay and the revised calculations for that pay follows:

HEADQUARTERS UNITED STATES MARINE CORPS,
ADJUTANT AND INSPECTOR'S DEPARTMENT,
Washington, December 11, 1913.

To: Officer in charge, Paymaster's Department, Headquarters.

Subject: Pay status of enlisted force.

1. In compliance with telephonic request I give below a table showing the number of enlisted men, by grades, serving in the Marine Corps on December 10, 1913, in the first, second, third, fourth, fifth, sixth, and seventh three years of continuous service, or over, including those who have earned reenlisted (class 3) pay:

	Sergeants major.	Quartermaster sergeants.	Drum major.	First sergeants.	Gunnery sergeants.	Sergeants.	Corporals.	Drummers.	Trumpeters.	Privates.	Apprentices.	Leader of band.	Second leader.	First-class musicians.	Second-class musicians.	Aggregate.
First period.....				1		15	196	57	54	5,215	57	1		30	30	5,656
Second period.....		5		2	9	150	376	34	24	1,721						2,321
Third period.....	1	24	1	25	13	168	168	2	11	514						927
Fourth period.....		10		18	16	98	60			139						342
Fifth period.....		1	7	12	18	70	45			76						229
Sixth period.....		2	10	16	13	25	17			33						116
Seventh period.....		7	12	26	11	48	26			29						159
Class 3 and first.....		1				11				70						82
Class 3 and second.....	1	2		7	3	7	9			26						55
Class 3 and third.....		1		1	1	2	3			13						21
Class 3 and fourth.....		2		1	1	1	4			4						13
Class 3 and fifth.....		1		1			1			2						5
Class 3 and sixth.....			2							1			1			6
Total.....	12	77	1	112	85	584	916	93	90	7,843	57	1	1	30	30	9,932

NOTE.—The number of sergeants and corporals given includes 115 holding recruiting warrants as sergeants and 26 holding recruiting warrants as corporals.

M. LEMORE, Acting.

Number.	Enlistment period.	Rates.	Amounts.
17	Serving in second enlistment period.....	\$481	\$816
2, 386	Do.....	361	85, 896
77	Serving in third enlistment period.....	96	7, 292
906	Do.....	72	65, 160
47	Serving in fourth enlistment period.....	144	6, 768
163	Do.....	108	17, 604
153	Do.....	84	12, 852
42	Serving in fifth enlistment period.....	192	8, 064
120	Do.....	144	17, 280
80	Do.....	96	7, 680
43	Serving in sixth enlistment period.....	240	10, 320
43	Do.....	180	7, 840
35	Do.....	108	3, 780
60	Serving in seventh enlistment period.....	288	17, 280
74	Do.....	216	15, 984
30	Do.....	120	3, 600
4, 275	Total.....		288, 316

The following table shows in detail the corrections to be observed in the item of "Pay of enlisted men, active list":

Original estimates, as placed before the Navy Department.....	\$3, 072, 966. 00
Sea pay.....	\$122, 000. 00
Foreign-service pay.....	59, 200. 00
Continuous-service pay.....	60, 320. 00
Miscellaneous items.....	24, 230. 92
	<u>265, 750. 92</u>
	2, 807, 215. 08

The total expenditure for the fiscal year ending June 30, 1913, in this item was \$2,654,075.49, the corps not having been entirely full for that period. The amount appropriated for that year was \$2,866,362; we had, therefore, an unexpended balance of \$212,286.51.

The CHAIRMAN. The next item is "For pay and allowances prescribed by law of enlisted men on the retired list." That is a mathematical calculation?

Col. RICHARDS. Yes, sir; there is a certain number each year and we aim to put the exact number in the bill. Those changes all represent natural changes in the corps.

The CHAIRMAN. The next item is "Undrawn clothing: For payment to discharged soldiers for clothing undrawn, \$120,000." I notice that you use the word "soldiers." Heretofore you have been using the words "enlisted men." Do you use the word "soldiers" with reference to the marines?

Col. RICHARDS. Yes, sir; we consider that the marine is a soldier. That phraseology has been in the bill for some time.

The CHAIRMAN. I know. I am just asking for information.

Col. RICHARDS. It might be changed to "enlisted men."

Mr. WITHERSPOON. If a marine is a soldier and sailor both, as you claim, why not make it "marines" instead of "soldiers"? A soldier just describes him in one capacity and you claim that he has both.

Col. RICHARDS. Yes, sir.

The CHAIRMAN. I notice that you have made a reduction of \$5,475 in the estimate for undrawn clothing. I understand you to say that your enlistments are now full or practically so—you were within 27 yesterday—and have been for quite awhile. What will be the demand during the next year for undrawn clothing? Would there

not be a reduction larger than the \$5,000 if you have a full enlistment now and you have an enlistment that runs over this next year?

Col. RICHARDS. In figuring on that item we take the number of enlisted men which we expect will be discharged during the fiscal year. We know the number of discharges which are naturally due to terms of service that are due to expire. Of course there are always desertions and a man may not complete his service, but we can generally estimate with accuracy about the number of discharges that are to be expected.

The CHAIRMAN. This is based on the terms of the men who enlisted prior to this last increase?

Col. RICHARDS. And who have thus far saved that amount of clothing, some of whom enlisted three years ago. That item of undrawn clothing is simply a question of the use of one appropriation or another. There is an appropriation to clothe these men and there is an allowance in kind of clothing fixed by the department. In the early part of a man's enlistment he might exceed his allowance, and in that event he pays for the excess, but having exceeded his allowance, he is amply supplied with clothes and that continues for two years and then he may save. Part of that saving represents money he has paid out of his pocket, and when the time comes for his discharge he receives that money back. At the same time the men who are economical in the use of their clothing are entitled to the money value of their savings; that explains this item. It is a question of one appropriation or another. A man's allowance is a certain amount of clothing.

Mr. BROWNING. Do you have many desertions from the Marine Corps?

Gen. BIDDLE. Yes, sir; we have a good many.

Mr. BROWNING. I thought it was a very small percentage.

Gen. BIDDLE. It was $6\frac{1}{2}$ per cent the last fiscal year.

Col. RICHARDS. About 10 years ago it ran very high.

Gen. BIDDLE. This year, the year before, and the year before, the number was very much less.

Mr. STEPHENS. How does the number of desertions from the Marine Corps compare with the number of desertions from other branches of the service?

Gen. BIDDLE. We have the most desertions. The Army has the least number, the Navy next, and the Marine Corps the most.

Mr. STEPHENS. Why is that?

Gen. BIDDLE. Really, I do not believe I am able to say. I do not believe the marine is quite as contented as the soldier or sailor.

Mr. WITHERSPOON. If that be so, it looks, when you give the marines sea service and let them do the same kind of work that the enlisted men in the Navy do, that that should make them better satisfied?

Gen. BIDDLE. They do not get as much pay when they go afloat, and they find that almost every bluejacket with the same length of service gets more pay.

Mr. WITHERSPOON. That is the point?

Gen. BIDDLE. I think that that probably has something to do with it.

Mr. BROWNING. It seems to me that you have a much better class of men in the Marine Corps than in any other branch of the service.

Gen. BIDDLE. They are high-class men, I think. That possibly might be a reason why they desert.

Mr. BROWNING. I can not understand why there should be a larger percentage.

Gen. BIDDLE. The marine detachment is only about 8 per cent of the whole crew.

Mr. STEPHENS. Have you ever investigated as to when the most of the marines desert that do desert, whether it is after a long land service or whether it is after sea service?

Gen. BIDDLE. We have very full statistics as to desertions. Notwithstanding the fact that they do not appear to like to go to sea, it is possible that we have more desertions on shore. It may be the thought that they are going to sea; I can not say.

Mr. HENSLEY. Have you ever thought of the equipment of the Army to recover the deserters, and probably the fear, from their viewpoint, that they will be recovered and brought back and be subjected to punishment prevents them from deserting?

Gen. BIDDLE. We have practically the same thing.

Mr. HENSLEY. The number of Army stations over the country are well equipped to find these fellows and recover them?

Gen. BIDDLE. We issue rewards, some as high as \$50, and we make arrangements so that they can be delivered to any of the recruiting stations which are all over the United States.

Mr. HENSLEY. In my district in St. Louis is the Jefferson Barracks, and those officers are very vigilant, and of course it is a rare thing that a deserter from the Army goes out over that section of the country and remains there. They get him back. It occurred to me that probably the thought that they would be apprehended and brought back might have a restraining influence upon them.

Mr. WILLIAMS. Do your investigations or trials show the cause of desertion—what influences the man in deserting?

Gen. BIDDLE. We try to ascertain that, but I do not know that we are able to tell positively what it is.

Mr. WILLIAMS. Do the men express dissatisfaction with the conditions?

Gen. BIDDLE. You would be surprised if you went among the barracks and asked the men whether they liked it and why their mess-mates deserted; you would not get any unanimous reply. I never could find out. I have tried in various ways. The men are well clothed and well fed and have very comfortable barracks and they have all the liberty they want. You will find in a barracks with four or five hundred men that nine-tenths of them can go out and that they do not want to go; they do not have any money to spend and they stay in the barracks. That is not the reason. I think possibly that we get a good many young men from the country and and they do not like to be herded together, are not accustomed to it, and they get homesick. We do not have so many desertions on the second enlistment.

Mr. STEPHENS. What is the percentage of desertions on the second enlistment?

Gen. BIDDLE. About 5 per cent.

The CHAIRMAN. The next item is "Mileage: For mileage to officers traveling under orders without troops, \$55,000." Did you use all of that appropriation?

Col. RICHARDS. No, sir; we used all except about \$2,000. That is about as close as we can figure. This mileage item has not been exceeded for a number of years.

The CHAIRMAN. Can you reduce it?

Col. RICHARDS. I do not think it could be safely reduced; no, sir.

The CHAIRMAN. The next item is "For commutation of quarters of officers on duty without troops where there are no public quarters, \$42,000," which is the same as last year?

Col. RICHARDS. Yes, sir. As a matter of fact when we cast up, our expenditures for last year ran something more than \$2,000 above \$42,000, the amount here estimated. The whole appropriation is a lump sum, and we work as near to these items as possible, but on a question of commutation of quarters it depends altogether on the character of the service performed by officers.

The CHAIRMAN. And the assignments?

Col. RICHARDS. Yes, sir. I have a statement which shows the assignment of officers, 77 in all, drawing commutation of quarters and explaining the expenditure of \$44,167.36. This amount represents what has been actually paid—the amount actually chargeable under this item was \$44,615.36, the difference being due to the fact in some instances the Government's obligation was not discharged until after the year was closed.

(The statement referred to by Col. Richards follows:)

Expenditures, commutation of quarters, fiscal year 1913.

	Average number of officers on duty.	Amount.
Recruiting service.....	19	\$10,368.00
Naval prisons.....	12	5,616.00
Army Service School, Fort Leavenworth, Kans.....	2	1,152.00
Army War College, Washington, D. C.....	2	1,440.00
Naval War College, Newport, R. I.....	2	1,012.26
Office of Judge Advocate General, U. S. Navy.....	3	1,728.00
Office of Naval Intelligence.....	1	720.00
Philadelphia, Pa. (depot quartermaster).....	3	1,848.00
New York, N. Y. (assistant paymaster).....	2	1,152.00
San Francisco, Cal. (depot quartermaster, adjutant and inspector, assistant paymaster).....	5	3,456.00
Manila, P. I. (battalion commander staff, adjutant and inspector, assistant paymaster, assistant quartermaster).....	8	4,742.00
Peking, China (legation).....	2	1,008.00
Headquarters, Washington, D. C. (staff departments).....	16	9,924.00
Total.....	77	44,167.36

Col. RICHARDS. The following table shows last year's expenditures, the current year's appropriations now being expended, and what is asked for for the next fiscal year, and the cause of the increase or decrease, briefly stated:

Itemized statement explanatory of estimates "Pay, Marine Corps, 1915."

Items.	Estimated expenditures, 1913.	Appropriated, 1914.	Estimated, 1915.	Increase.	Decrease.	Cause of increase or decrease.
Pay, officers, active.....	\$234,001.94	\$256,598.00	\$277,457.00	\$20,859.00	.....	Additional pay for aviation duty, amounting to \$6,686, and about \$14,000 for sea service due to new legislation submitted.
Pay, officers, retired.....	180,809.73	181,677.50	186,492.50	4,815.00	.....	Addition of 1 colonel (Denny), 2 captains (Guggenheim and Crist), 1 first lieutenant (Tittout); died, 1 brigadier general (Cochrane) and 1 first lieutenant (Gibson).
Pay, enlisted men, active.....	2,654,075.49	2,946,076.00	2,789,225.00	.....	\$166,851.00	Increase, \$122,000 sea service. Decrease in travel allowance, foreign-service pay, etc., \$5,110. Decrease per department's instructions, \$283,741. Net decrease, \$166,851.
Pay, enlisted men, retired.....	117,780.42	150,759.00	147,411.00	.....	3,348.00	Decrease of 7 in number.
Undrawn clothing.....	136,391.65	125,475.00	120,000.00	.....	5,475.00	Decrease in amount of savings; more clothing drawn.
Mileage, traveling expenses, etc.....	52,923.01	55,000.00	55,000.00	.....	.....	No change.
Communication of quarters.....	44,415.36	42,000.00	42,000.00	.....	.....	Do.
Civil force.....	30,648.31	36,711.28	36,711.28	.....	.....	Do.
Total.....	4,151,935.93	4,503,296.78	4,353,296.78	25,674.00	175,674.00	

The CHAIRMAN. The next item is, "Pay of civilian force," and that is under the classified service?

Col. RICHARDS. It is provided for by law.

The CHAIRMAN. There is no change?

Col. RICHARDS. No, sir.

The CHAIRMAN. We next come to the Quartermaster's Department, Marine Corps. I notice, Colonel, under "Provisions, Marine Corps," you have new language "for ice machines and their maintenance where required for the health and comfort of the troops and for cold storage."

Col. McCawley. That is just a request for an authorization of expenditure from this appropriation. It involves no increase in money. The Comptroller of the Treasury, in a decision rendered in November, 1911, said that under the language of this act ice only could be purchased, and that no buildings could be erected or any apparatus procured out of funds provided under this head. We wish to establish cold-storage and ice-manufacturing plants. It is highly desirable at many isolated stations and other places to erect those plants for cold storage and to manufacture ice as a matter of economy. The suggested language is only to secure the authority of Congress to provide for such expenditures out of this appropriation that the language is inserted. It involves no increase in the appropriation at all.

The CHAIRMAN. Have you heretofore been doing this?

Col. McCawley. No; we never attempted it. We asked the opinion of the comptroller and he decided that we could not do it.

I would suggest that the word "for" be omitted from the language if the committee intends to authorize it.

The CHAIRMAN. Have you some estimate of what those ice machines would cost and where you would place them.

Col. McCawley. One is needed at Mare Island and we have an estimate on that of \$3,500, a small machine. We think that we could make ice there at not exceeding 20 cents a hundred pounds and we are now paying 60 cents. You see there would be a material saving if we could install this machine.

The CHAIRMAN. How much ice is used at the Mare Island Navy Yard?

Col. McCawley. Last year we used about 135,000 pounds.

The CHAIRMAN. You say that there would be a saving of 40 cents a hundred pounds on the ice? Do you buy ice there by quantity?

Col. McCawley. Yes, sir; under contract, after advertising and competitive bidding.

The CHAIRMAN. And you pay 60 cents a hundred pounds?

Col. McCawley. Yes, sir; 60 cents a hundred pounds was the low bid for this year.

The CHAIRMAN. What do you pay for ice at other points compared with the 60 cents a hundred pounds?

Col. McCawley. It varies. I have not the data here, but I can easily secure it.

The CHAIRMAN. Please put in the hearing what you pay at the different places. Sixty cents a hundred pounds for ice that is bought in quantity seems to me very excessive.

Col. McCawley. It is very high; there is no question about it, but the price is the lowest after the competition required by law. I append the prices paid at other stations on competitive bidding.

Statement showing the stations, name of contractor, and price per 100 pounds of ice furnished the Marine Corps during fiscal year beginning July 1, 1913.

Contractor.	Station.	Price.
Knickerbocker Ice Co.....	Marine barracks, New York.....	\$0.40
Do.....	Assistant paymaster, New York.....	.40
Do.....	Recruiting offices, New York.....	.40
American Ice Co.....	Marine barracks, Philadelphia.....	.24
Do.....	Depot of supplies, Philadelphia.....	.24
Do.....	Recruiting offices, Philadelphia.....	.24
Morrill-Atwood Ice Co.....	Marine barracks, Boston, Mass.....	.245
Do.....	Naval prison, Boston, Mass.....	.245
Do.....	Recruiting offices, Boston, Mass.....	.245
Lake View Park Ice Co.....	Hingham, Mass.....	.35
Parlett & Parlett Co. (Inc.).....	Marine barracks, Annapolis, Md.....	.40
William G. Maupin.....	Marine barracks, Norfolk, Va.....	.25
American Ice Co.....	Winthrop, Md.....	.60
Peoples Ice & Fuel Co.....	Port Royal, S. C.....	.40
Consumers Ice & Cold Storage Co.....	Key West, Fla.....	.40
M. J. Ford.....	Marine barracks, Bremerton, Wash.....	.40
Fresno Consumers Ice Co.....	Marine Barracks, Mare Island, Cal.....	.60
Union Merchants Ice Delivery Co.....	Depot of supplies, San Francisco, Cal.....	1.00
Do.....	Recruiting offices, San Francisco, Cal.....	1.00
Oahu Ice & Electric Co.....	Marine barracks, Honolulu, Hawaii.....	.175

The CHAIRMAN. Where else is it contemplated to put one of the machines?

Col. McCawley. I have not made up any definite plan of action. We would establish them where the needs of the service demanded and as occasion required, but not at any place where we can buy ice cheaper than it would cost to manufacture it.

The CHAIRMAN. Have any occasions presented themselves to you so far?

Col. McCawley. At Olongapo there is one already established, but we did not pay for it. It was established under a special authorization of Congress and it did not come out of our appropriation, but we get ice from that machine. We would establish them at places in the Tropics, probably at Guam, now that the command is to be increased there, and also at Honolulu.

The CHAIRMAN. Please put into the hearing some statement as to the probable amount that you would want to use for this purpose.

Col. McCawley. It would not require any addition to this appropriation; it would simply be the authority, in case we desired to do so. I doubt if the total expense would be over \$10,000.

The CHAIRMAN. I understand, but if you do not use it, perhaps the \$890,000 might be reduced by that amount.

Col. McCawley. No, sir; we would have to buy the ice in any event. If we could establish these ice machines everywhere and manufacture the ice at a great saving, then we could reduce the sum, but that is not contemplated. As a matter of fact, we had a deficiency in that appropriation last year of \$56,500.

Mr. Witherspoon. How much would you have to expend to establish an ice plant?

Col. McCawley. It would depend on the size of the post. A small post would require a small one, probably \$1,500 to \$2,000.

Mr. Stephens. The one at the Mare Island Navy Yard would cost \$3,500?

Col. McCawley. Yes, sir; that is the estimate which comes from the yard. I am not quite prepared to say that our figures are correct on that.

Mr. STEPHENS. There is no natural ice at Mare Island?

Col. McCawley. No, sir; all manufactured ice.

I have here some statistics showing the prices of the ration at the permanent posts of the corps in the United States, including Honolulu, Hawaii, for the years 1913 and 1914, also showing the average cost of the ration for the past 11 years, etc., together with an itemized statement of expenditures under this head for the fiscal year 1913, which I will include in my hearing. From the latter statement it will be noted that \$825,000 were appropriated under "Provisions" in the naval act of August 22, 1912, and in addition thereto a deficiency of \$56,500 thereunder was authorized in the act of March 4, 1913, making a total of \$881,500.

I desire to invite particular attention to my remarks on this subject when before the Subcommittee on Appropriations of the House, last January, page 73, hearings on general deficiency bill. In addition to the \$56,500 deficiency we will probably have a further small deficiency under the appropriation "Provisions" for the fiscal year 1913:

Memorandum showing comparative cost of ration at 21 permanent posts of the Marine Corps for the fiscal years 1913 and 1914.

Station.	Fiscal year 1913.	Fiscal year 1914.
United States naval prison, Portsmouth, N. H.	\$0. 2504	\$0. 2686
Marine barracks, Portsmouth, N. H.	. 2535	. 2630
United States naval prison, Boston, Mass.	. 2500	. 2469
Marine barracks, Boston, Mass.	. 2608	. 2491
United States naval magazine, Hingham, Mass.	. 3180	. 2891
Marine barracks, New York, N. Y.	. 2522	. 2547
United States naval magazine, Iona Island, N. Y.	. 3233	. 3131
United States naval magazine, Dover, N. J.	. 2913	. 2692
Marine barracks, Philadelphia, Pa.	. 2363	. 2480
Marine barracks, Annapolis, Md.	. 2615	. 2704
Marine barracks, Washington, D. C.	. 2403	. 2432
Marine barracks, navy yard, Washington, D. C.	. 2407	. 2435
Naval Proving Grounds, Indianhead, Md.	. 2477	. 2519
Marine Corps rifle range, Winthrop, Md.	. 2605	. 2618
Marine barracks, Norfolk, Va.	. 2481	. 2375
Naval disciplinary barracks, Port Royal, S. C.	. 2617	. 2804
Marine barracks, Charleston, S. C.	. 2844	. 3206
Marine barracks, Key West, Fla.	. 3711	. 3900
Marine barracks, Mare Island, Cal.	. 2354	. 2539
Marine barracks, Puget Sound, Wash.	. 2442	. 2539
Marine barracks, Honolulu, Hawaii.	. 2836	. 2876

Average cost of ration, fiscal year 1913. \$0. 2678
 Average cost of ration, fiscal year 1914. 2698

Statement of cost of rations at various posts in the United States for the past 11 years.

Fiscal year.	Number of posts.	Average cost per ration.
1904.	19	\$0. 2326
1905.	19	. 2346
1906.	19	. 2283
1907.	19	. 2165
1908.	20	. 2436
1909.	20	. 2800
1910.	23	. 2699
1911.	25	. 2884
1912.	26	. 2501
1913.	21	. 2678
1914.	21	. 2698

Expenditures incurred under Marine Corps appropriations for fiscal year 1913.

PROVISIONS.	
Rations in kind.....	\$587, 634. 31
Commutation of rations to enlisted men on detached duty.....	3, 351. 44
Commutation of rations to enlisted men on furlough.....	4, 801. 25
Commutation of rations to clerks and messengers at staff offices.....	54, 130. 38
Board and lodging for recruiting service.....	125, 611. 62
Subsistence while traveling.....	64, 898. 19
Ice for preservation of rations and office use.....	23, 394. 85
Transportation of provisions.....	2, 267. 06
Civilian labor in connection with transportation of provisions in Philip- pines.....	4, 023. 75
Subsistence in Navy hospitals.....	16, 712. 27
Total.....	886, 825. 12

The maximum price paid for rations during the current fiscal year was at Key West, Fla., \$0.36, against \$0.3711 last year, and the minimum current price is at Norfolk, at \$0.2375, with varying figures between those places. The average price is \$0.2698 per ration.

The CHAIRMAN. The next item is "Clothing," and you have reduced that from \$675,000 to \$620,063?

Col. McCawley. Yes, sir. That reduction came about in this way. After this estimate of \$675,000 was submitted, in discussing it with the secretary, he was anxious to have a reduction made, and I told him that we could reduce the clothing appropriation somewhat, due to the economies brought about by the administration of the Philadelphia depot of supplies, and the amount I suggested, based on the recommendation of the officer in charge of that depot, was \$54,937, which would make the total appropriations under the Quartermaster's Department an even \$3,000,000. Including the \$54,937, a total reduction under this head of clothing of \$121,857 has been effected in the last two years, and a new uniform has been introduced during that period. I think this is as far as we can go at this time. That has been brought about by an economical administration of the Philadelphia depot of supplies. We have stated all along in asking for appropriations for this depot, that if they were granted we would show a reduction in the manufacture of clothing, which has been brought about in a very satisfactory manner. I would like to file with the committee a statement showing the list of articles manufactured at the Philadelphia depot, with the cost of the same, together with the former cost when these articles were obtained outside, and the percentage of saving makes a very interesting exhibit. I also file a statement as to how this appropriation will be spent.

The CHAIRMAN. We shall be glad to have it inserted in the record.

The committee went through that factory, and I was, personally, very much pleased with the work.

(The statement submitted by Col. McCawley follows:)

UNITED STATES MARINE CORPS,
QUARTERMASTER'S DEPARTMENT,
DEPOT OF SUPPLIES, 1100 SOUTH BROAD STREET,
Philadelphia, Pa., December 31, 1913.

To: Officer in charge, Quartermaster's Department, Marine Corps, Washington, D. C.
Subject: Comparative statement of cost of articles now manufactured at depot that were formerly purchased under contract, etc.

Reference: (a) Letter, Quartermaster Department, December 19, 1913, 25500-15.

Inclosures: (A), (B), (C), and (D). Statements of clothing factory, equipment factory, woodworking shop and machine shop, power, heat, and light.

The above inclosures show all articles that are manufactured in this depot. Where possible, comparison has been made with prices formerly paid for articles purchased,

giving the percentage of saving or increase to the Government. Where an increase cost to the Government is shown, the articles in most cases have been improved upon. Attention is also invited to the fact that the cost of materials has in general increased since the commencement of manufacture in this depot.

2. The saving made by the installation of the sponging plant is as follows:

Total yardage sponged, 419,536; outside cost, \$0.0375 per yard; inside cost, \$0.025 per yard—\$1,573.26 and \$1,048.84 being the outside and inside costs of sponging this quantity of material, respectively, showing a saving of \$524.42, or 33½ per cent, since the installation of the plant in September, 1912. This work is being done a great deal better than it was possible to have it done outside, owing to improved methods and machinery.

CYRUS S. RADFORD.

A.

DECEMBER 31, 1913.

List of articles manufactured in the clothing factory at Marine Corps depot of supplies, Philadelphia, Pa.:

	Inside cost	Outside cost	Per cent saving	Per cent increase.
Coats, full dress, band.....	\$11.37	\$11.37		
Coats, special full dress, band.....	14.09	14.09		
Coats, dress.....	8.80	8.78	1	
Coats, white cotton drill.....	2.61			
Coats, field.....	1.42	1.46	5	
Overcoats, Winterfield shade.....	12.69			
Overcoats, blue.....	10.86	11.01	1	
Trousers, full dress, band.....	3.73	3.78		
Trousers, special full dress, band.....	7.95	7.95		
Trousers, noncommissioned officers.....	2.97	3.02	2	
Trousers, privates.....	2.46	2.51	2	
Trousers, white cotton drill.....	1.32			
Trousers, field.....	1.06	1.16	9	
Trousers, summer.....	1.05	1.15	9	
Shirts, flannel.....	2.05	2.28	8	
Drawers, jean.....	2575	.38	32	
Pajama coats.....	.35			
Pajama pants.....	.80			
Bunk nets, bobbinet.....	1.85	3.60	49	
Oot nets.....	1.20			
Flags, recruiting.....	7.34			
Flags, storm.....	2.35	2.75	15	
Flags, guidons.....				
Flags, signal, 2 feet.....	.30	.30		
Dungaree coats.....	1.38			
Dungaree trousers.....	1.35			
Baseball shirts.....	2.25	1.95		1 13
Baseball trousers.....	1.69	2.70	87	
Baseball caps.....	.35	.75	53	
Cap covers, white.....	.11	.11		
Cap covers, khaki.....	.11			
Canvas overcoats, blanket lined.....	10.81			
Service stripes.....	.15	.15		
Chevrons, sergeant major, field.....	.31	.31		
Chevrons, quartermaster sergeant, field.....	.28	.31	10	
Chevrons, quartermaster sergeant, parade dress, field.....	1.35	1.35		
Chevrons, first sergeant, field.....	.27	.27		
Chevrons, gunnery sergeant, field.....	.72	.78	8	
Chevrons, sergeant, field.....	.17	.17		
Chevrons, corporal, field.....	.13	.13		
Chevrons, lance corporal, field.....	.07			
Chevrons, drummer, field.....		.11		
Chevrons, trumpeter, field.....		.11		
Chevrons, sergeant major, silk.....	.98	1.58	38	
Chevrons, quartermaster sergeant, silk.....	.98	1.58	38	
Chevrons, quartermaster sergeant, parade dress, silk.....	1.32	2.32	43	
Chevrons, first sergeant, silk.....	.66	1.07	38	
Chevrons, gunnery sergeant, silk.....	2.23	2.18		1 2
Chevrons, sergeant, silk.....	.51	.80	36	
Chevrons, corporal, silk.....	.37	.58	36	
Chevrons, drummer, silk.....	.15	.17	12	
Chevrons, trumpeter, silk.....	.14	.17	18	
Chevrons, sergeant major, shirt.....	.20	.20		
Chevrons, quartermaster sergeant, shirt.....	.14	.20	30	
Chevrons, first sergeant, shirt.....	.14	.15	7	
Chevrons, gunnery sergeant, shirt.....	.48	.48		
Chevrons, sergeant shirt.....	.12	.13	7	
Chevrons, corporal, shirt.....	.10	.10		

¹ Caused by improvements.

B.

DECEMBER 27, 1913.

List of articles manufactured in the equipment factory at Marine Corps depot of supplies, Philadelphia, Pa.:

	Inside cost.	Outside cost.	Per cent saving.	Per cent increase.
Bags, blanket.....	\$1.26	\$1.75	26	
Bags, bacon.....	.11			
Bags, condiment, haversack.....	.02			
Belts, dress.....	.72	.80	11	
Belts, dress, noncommissioned staff.....	1.94	2.06	6	
Belts, undress, garrison.....	.50			
Belts, undress and field, noncommissioned staff.....	5.99			
Boxes, cartridge, fair leather.....	.75			
Carriers, hand ax.....	.27	.91	70	
Carriers, pick mattock.....	.41	.37		111
Carriers, wire cutter, model 1910.....	.17			
Cases, fork and knife, haversack.....	.02			
Covers, camp stool.....	.18			
Covers, canteen, model 1910.....	.39	.68	43	
Covers, 1903 rifle.....	1.25			
Covers, cot.....	1.28			
Cloths, saddle, khaki.....	3.61	5.00	28	
Frogs, sliding, buff, bayonet scabbard.....	.09			
Frogs, sliding, fair leather, bayonet scabbard.....	.05			
Frogs, sword, buff.....	.55	.62	11	
Frogs, sword, fair leather.....	.55	.65	15	
Haversacks.....	1.05	1.45	28	
Limes, guy, Sibley tent.....	.03			
Limes, guy, hospital tent.....	.52			
Limes, eave, hospital tent.....	.08	.09	11	
Limes, eave, wall tent.....	.06	.08	38	
Leggings, pairs.....	.65	.75	13	
Mittens, asbestos, pairs.....	.75	2.85	74	
Pads, elbow, canvas.....	.12			
Pads, elbow, leather.....	.19			
Pads, elbow, sheepskin.....	.18			
Pads, knee, sheepskin.....	.40			
Pads, shoulder, canvas.....	.13			
Pads, shoulder, leather.....	.23			
Pads, shoulder, sheepskin.....	.18			
Rolls, bedding.....	6.97			
Rolls, clothing.....	3.30			
Slides, automatic pistol holster.....	.15	.21	29	
Slings, color, buff.....	7.75	8.00	3	
Slings, color, khaki.....	8.42	7.50	28	
Slings, drum, khaki.....	1.65	1.95	15	
Slings, 1903 rifle.....	.61	.81	25	
Stops, clothes.....	.005			
Spotters, target, large.....	.0125	.06	79	
Spotters, target, small.....	.0075	.05	85	
Straps, blanket bag, coat, pairs.....	.46	.67	31	
Straps, blanket bag, shoulder, pairs.....	.54	.73	26	
Straps, stirrup.....	.65			
Straps, razor.....	.30			
Surringles.....	.85			
Bags, mail, with ornament.....	6.11	4.75		120
Bands, sweat.....	.20	.33	39	
Tents, wall.....	22.27	22.61	2	
Tents, hospital, regular.....	50.22	51.19	2	
Tents, storage.....	76.65	95.23	19	
Tents, shelter halves.....	1.64	2.50	34	
Flies, wall tent.....	7.54	8.68	13	
Flies, hospital tent, regular.....	15.69	17.40	10	
Flies, hospital tent, tropical.....	20.85	25.56	18	
Flies, storage tent.....	28.26	30.39	13	

¹ Caused by improvements.

DECEMBER 27, 1913.

*List of articles manufactured in woodworking shop at Marine Corps depot of supplies,
Philadelphia, Pa.*

Articles.	Inside cost	Outside cost	Per cent saving.	Per cent increase.
Packing boxes, No. 1.....	\$1.032	\$1.07	3.5	.....
Packing boxes, No. 2.....	.948	.99	4.2	.....
Packing boxes, No. 3.....	.828	.87	4.8	.....
Packing boxes, 1 inch, No. 4.....	.42	.51	17.6	.....
Packing boxes, 1 inch, No. 4.....	.516	.....	.....	.....
Packing boxes, 1 inch, No. 5.....	.552	1.31	57.7	.....
Packing boxes, 1 inch, No. A.....	1.416	1.81	18.4	.....
Packing boxes, 1 inch, No. A.....	1.20	.....	.....	.....
Packing boxes, 1 inch, No. B.....	.792	.....	.....	.....
Packing boxes, 1 inch, No. B.....	1.02	1.31	22	.....
Packing boxes, 1 inch, No. B.....	.45	1.15	60.8	.....
Packing boxes, 1 inch, No. C.....	.888	.88	.....	1 4.3
Packing boxes, 1 inch, No. D.....	2.65	2.10	.....	1 26.2
Barracks clothing boxes.....	1.50	.....	.....	.....
Boxes for officers' mess gear.....	.35	.40	12.5	.....
Baseball bats.....	1.88	.....	.....	.....
Stall-bar benches.....	6.25	6.40	2.3	.....
Stall-bar sections.....	4.728	.....	.....	.....
Tool chests with padlocks.....	.96	.85	.....	1 12.9
Feed boxes, Colt's automatic gun.....	1.52	2.25	32	.....
Signal flag staffs, 2-section.....	3.12	3.75	16.8	.....
Signal flag staffs, 3-section.....	16.88	.....	.....	.....
Company record chests.....	3.00	.....	.....	.....
Recruiting frames w/glass.....	10.70	12.00	10.8	.....
Field desks.....	1.104	.....	.....	.....
Target disk markers, 20-inch.....	.924	.....	.....	.....
Target disk markers, 9-inch.....	27.35	29.70	7.9	.....
Handcarts.....	.09	.....	.....	.....
Semaphore flagpoles.....	2.94	.....	.....	.....
Signboards, "A" recruiting.....	31.50	.....	.....	.....
Dough troughs.....	22.00	.....	.....	.....
Molding tables.....	.75	.....	.....	.....
Dam boards.....	1.00	.....	.....	.....
National target, carrier, upright.....	1.056	.....	.....	.....
National target, frame "A".....	1.10	.....	.....	.....
National target, frame "B".....	1.704	.....	.....	.....
National target, frame "C".....	.37	.46	19.5	.....
Tent poles, wall, upright.....	.60	.85	29.4	.....
Tent poles, wall, ridge.....	2.35	2.95	20.3	.....
Tent poles, hospital, ridge, regulation.....	.96	1.55	38	.....
Tent poles, hospital, upright, regulation.....	1.12	2.50	55.2	.....
Tent poles, storage, upright.....	2.35	6.00	60.8	.....
Tent poles, storage, ridge.....	.33	.38	13	.....
Tent poles, storage, wall.....	.24	.27	11	.....
Tent poles, shelter.....	.025	.0325	23	.....
Tent pins, large.....	.0175	.0225	22.2	.....
Tent pins, small.....	.0075	.01	25	.....
Tent pins, round.....	.36	.38	5.2	.....
Camp stools.....	2.45	2.70	9.2	.....
Cots, field.....	.25	.30	16.3	.....
Cot frames.....	31.50	.....	.....	.....
Mess tables.....	8.50	.....	.....	.....
Mess benches.....	7.00	.....	.....	.....
Typewriter cases, field.....	10.50	.....	.....	.....
Blank-form units, field.....	25.54	.....	.....	.....
Ammunition chests, large.....	16.67	.....	.....	.....
Ammunition chests, small.....	5.00	4.25	.....	1 17.6
Hospital stretchers, field.....	.....	.....	.....	.....

1 Caused by improvements.

D.

DECEMBER 27, 1913.

List of articles manufactured in machine shop and power, heat, and light at Marine Corps depot of supplies, Philadelphia, Pa.:

	Inside cost.	Outside cost.	Per cent saving.	Per cent increase.
Garbage cans.....	\$1.85	\$1.82		1 2
Double hooks for field belts.....	.015			
Cot stampings, galvanized, with rivets, per set.....	.25			
Oxidized brass knobs for revolver holsters and cartridge boxes.....	.02			
Braces for mess benches.....	.025			
Brass couplings for signal flags.....	.60			
Brass couplings for small signal flags.....	.40			
Buckets.....	.26	.30	13 1/4	
Ironwork for packsaddles.....	15.00			
Card holders for bunks.....	.015			
Mouthpieces for machete scabbards.....	.25			
Pins for tent poles.....	.01			
Bands for tent poles.....	.02			
Electric current, light, and power, per kilowatt.....	.03	.10	70	

¹ Caused by improvements.

Estimates for the Quartermaster's Department of the Marine Corps for the fiscal year 1915.

CLOTHING.

Materials for manufacture of uniforms.....	\$325,000
Wearing apparel, bought made up.....	185,000
Labor for manufacture of uniforms.....	100,000
Installing and maintaining machinery and equipment.....	10,063
Total.....	620,063

Mr. ROBERTS. Have you manufactured anything at Philadelphia for the use of the Navy?

Col. McCawley. On one occasion we manufactured some white caps for the Navy, canvas caps, at the direction of the Secretary of the Navy, at quite a saving.

Mr. ROBERTS. Are you still making the caps for the Navy?

Col. McCawley. No; we made a certain quantity, the number wanted at that time, and having finished that their need was supplied, and we have not been called upon to make any more.

Mr. STEPHENS. What was the saving?

Col. McCawley. There was quite a little difference. I have not at hand what the Navy formerly paid for those hats, but we are making them for about 15 1/4 cents each, the Navy furnishing the materials, so that is just the cost of manufacture.

Mr. BROWNING. You need more room there?

Col. McCawley. Yes, sir; very much. We are very much handicapped for want of space and are obliged to rent additional storage facilities. If we had more space, it would enable us to go further in these economies. We submitted estimates this year for an increase of the establishment, but they were not allowed by the department.

Mr. STEPHENS. Do you manufacture any article at a greater cost than it can be purchased for outside?

Col. McCawley. Only in one or two cases and that is where the character of the article to be supplied has been improved in its quality.

Mr. STEPHENS. Quality for quality, you are manufacturing for less than you can buy outside?

Col. McCawley. Very much less, sir. If you will take the time to examine the exhibit which I will file you will be very much impressed by the savings we have made.

Mr. WITHERSPOON. Is the clothing for the enlisted men in the Navy all purchased in the market or is it manufactured?

Col. McCawley. It is manufactured to a considerable extent at a factory which the Navy maintains at the New York Navy Yard. Certain articles are bought outside, like shoes, undershirts, socks, etc. Things like that can not be manufactured by us without a very considerable increase in the plant.

Mr. WITHERSPOON. Do you know whether that practice shows a decrease?

Col. McCawley. I am not familiar with the Navy operations.

Mr. ROBERTS. The decrease in this appropriation for clothing is due to the increased economics at the Philadelphia factory?

Col. McCawley. Yes, sir.

The CHAIRMAN. The next item is "Fuel, Marine Corps," and the amount is the same as last year, \$164,000. Did you have any unexpended balance in that appropriation? Could the amount be reduced?

Col. McCawley. There was a slight unexpended balance, but I would not advise reducing the appropriation, sir, because it is a variable appropriation, depending upon the weather. Last year we had a balance of \$20,000 in that appropriation, but it was due to the very mild winter we had and to the fact that our troops were not all in barracks during the period in question. I think it would be unwise to make a reduction in it. Of course, it is one of the items in which a deficiency can be created, if necessary.

The CHAIRMAN. The next item is "Military Stores, Marine Corps," and the language is the same and the amount the same as last year, \$307,737. Did you have any unexpended balance in that item?

Col. McCawley. There was a small unexpended balance of \$5,600. That is likely to be somewhat reduced by adjustments in the Treasury Department, but out of an appropriation of over \$307,000 a margin of \$5,000 is about as close an administration as you can expect. I have an analysis here of this appropriation which will show you exactly how we purpose spending it next year.

The CHAIRMAN. Please insert it in the record.

Col. McCawley. Yes, sir.

(The statement referred to by Col. McCawley follows:)

The estimate under this head, namely, \$307,737, is in amount the same as appropriated for the current fiscal year (1914), which it is believed will be sufficient under ordinary conditions to meet the requirements of the service, but no reduction should be made under this head as it is only by careful management that it is sufficient. As will be observed by reference to the phraseology, a very large number of items are provided for under this appropriation. Practically all of the military equipment, together with rifles, revolvers, tentage, and large quantities of ammunition, are purchased out of this appropriation, as well as the construction, equipment and maintenance of schools, library, and amusement rooms, and gymnasiums for enlisted men, the purchase of musical instruments and accessories for bands, and the establishment and maintenance of targets and ranges. It is estimated that the following sums will be required for the objects stated, which figures are based, so far as practicable, upon expenditures for the fiscal year 1913:

Labor for manufacture of accoutrements, tents, canteens, etc.....	\$22, 737
Civilian labor at rifle ranges.....	2, 500
Extra-duty pay to enlisted men at posts.....	500
Material for tents.....	50, 000
Purchase and repair of equipment and machinery.....	2, 500
Rent of rifle ranges and entrance fees in matches.....	3, 200
Maintenance of bands.....	1, 300
Rifles, machine guns, and spare parts.....	30, 000
Atheletic supplies, equipment for gymnasiums, libraries and amusement rooms for enlisted men.....	6, 000
Ammunition.....	70, 000
Material for manufacture of accoutrements, etc.....	10, 000
Medals, badges, and engraving.....	2, 500
Military equipment, including revolvers, cartridge boxes, bayonet scab- bards, swords, drums, flags, etc.....	90, 000
Incidental expenses of schools of application.....	500
Cots for field use.....	10, 000
Field ovens and stoves for tents.....	6, 000
Total.....	307, 737

The CHAIRMAN. The next item is "Transportation and recruiting, Marine Corps," \$317,000. Last year you said that you were recruited about up to your limit. Will you have expirations during the fiscal year 1915 that will require as much recruiting as you have had in the past year?

Col. McCawley. There are always the vacancies to be provided for of men who enlisted four years ago. As they are discharged we have to recruit to fill their places, in addition to taking care of the desertions and the men who are discharged by reason of physical disability, etc. Last year we were recruited up to the limit also, we were very little under the allowance of law, and we asked for the same amount of money, and at this time my books show a balance of \$23,000 in that appropriation for the last fiscal year, but that may be still further reduced by adjustments in the Treasury Department. I would be unwilling to recommend a reduction in that estimate for next year.

The CHAIRMAN. In addition to recruiting, this item involves transportation?

Col. McCawley. Yes, sir.

The CHAIRMAN. Are you having more or less or substantially the same transportation?

Col. McCawley. It is about the same. That appropriation is divided in about this manner—I will file this analysis for the record: Rent of recruiting offices, examination of applicants, advertising in newspapers and posters, car and ferry tickets, equipment for recruiting offices, such as flags, scales, etc., incidental expenses of recruiting service, transportation in connection with the recruiting service, transportation of troops from station to station, and the purchase of toilet kits. Those are the various subheads of the appropriation for which this money must be expended.

(The statement referred to by Col. McCawley follows:)

"Transportation and recruiting." The sum estimated under this head, viz., \$317,000, is in the same amount as that appropriated for 1913 and 1914, and no reduction should be made under this head. The transportation of all troops of the Marine Corps is provided for out of this appropriation, besides the purchase of equipment for recruiting offices including the incidental expenses of the recruiting service, such as telegraph and telephone service, rent of recruiting offices, toilet kits for recruits, furniture, etc.

It is estimated that the following sums will be required for the objects stated:

Rent of recruiting offices.....	\$36, 000
Examination of applicants.....	4, 000
Advertising in newspapers and posters.....	45, 000
Car and ferry tickets.....	5, 000
Equipment for recruiting offices, such as flags, scales, vision tests, office furniture, etc.....	24, 000
Incidental expenses of recruiting service, including telegrams, telephone service, light, heat for offices, freight and express, and towel service, etc ..	5, 000
Transportation in connection with the recruiting service.....	70, 000
Transportation of troops.....	121, 000
Toilet kits.....	7, 000
Total.....	317, 000

The CHAIRMAN. The next item is "Repairs of barracks, Marine Corps, \$140,000."

Col. McCawley. That is just the same amount that we had before, sir. The funds provided for under this head are used exclusively for repairs and improvements to barracks, quarters, and other public buildings coming under the cognizance of the Quartermaster's Department of the Marine Corps, also for payment of rent of buildings and offices occupied by the Corps, exclusive of the rent of recruiting offices, which is paid out of subhead Transportation and recruiting.

There are three depots of supplies, located at Philadelphia, Pa., San Francisco, Cal., and Cavite, P. I., besides the buildings at 21 posts. To keep all these buildings in good state of preservation requires large expenditures for labor and materials. At some of the posts, principally Boston, New York, Mare Island, and Portsmouth, N. H., the buildings are very old, and constantly require more or less extensive repairs in the way of painting and improvements. The buildings in the Tropics quickly deteriorate from climatic influences, and they must be painted at least once a year for preservation. This expense annually amounts to a considerable sum. It is believed, with the strictest economy, that the sum estimated for under this head for 1915, i. e., \$140,000, will be sufficient to meet all the requirements under usual conditions.

Wear and deterioration of old buildings is very considerable and very rapid, and this is particularly marked in the tropics. It is only with a great deal of economy that we are able to keep within the limit of the appropriation. I have endeavored, as I told you gentlemen last year when asking for the lump-sum appropriation under "maintenance," to keep within the limits of the several subheads of the appropriations for which specific sums are given, and I am doing that.

The CHAIRMAN. Did you have any unexpended balance under that item?

Col. McCawley. Under "Repairs of barracks" I had \$3,000 last year. I append an analysis of the proposed expenditures under this appropriation.

Estimates for the Quartermaster's Department, United States Marine Corps, fiscal year 1915, under the subhead "Repairs of barracks."

Repairs and improvements to buildings.....	\$100,000.00
Extra-duty pay to enlisted men.....	8,652.06
Rent of building:	
Mills Building Annex, Washington, D. C.....	\$4,500.00
Maintenance for above.....	4,000.00
Paymaster's offices, Southern Building.....	2,702.00
Stable, Washington, D. C.....	480.00
Storehouse, Philadelphia, Pa.....	2,371.94
Assistant paymaster's offices, New York, N. Y.....	2,000.00
Staff offices, San Francisco, Cal.....	10,500.00
Staff offices, Manila, P. I.....	2,700.00
Storerooms and officers' barracks, Cavite.....	1,950.00
Barracks, Guam.....	144.00
	<hr/>
	31,347.94
Total.....	140,000.00

The CHAIRMAN. The next item is "Forage, Marine Corps," and the amount is the same as last year. Will you need that amount during the next year?

Col. McCawley. The amount estimated is \$22,200. Expenditures under this head vary according to the number of public, as well as private, animals belonging to officers entitled to draw forage under the regulations which must be provided for. Last year we had a deficiency of \$735 in that appropriation.

The CHAIRMAN. The next item is "Commutation of quarters, Marine Corps," and the amount is the same as last year. That is largely a calculation?

Col. McCawley. It is a good deal of a calculation. It is a varying item dependent upon the number of officers stationed at posts where there are no public quarters. If there are more officers stationed at places where there are no public quarters, of course, more money has to be expended out of the appropriation for commutation.

The CHAIRMAN. Did you have any unexpended balance?

Col. McCawley. For the fiscal year 1913 there was an unexpended balance of \$3,500. That was due very largely to the absence from the United States of expeditionary forces. We had a large number of men out of the United States.

The CHAIRMAN. The next item is "Contingent, Marine Corps," and that is the same as last year. I notice that you have inserted new language on page 104, "Deodorizers, lubricants, disinfectants"?

Col. McCawley. That is simply to provide for the purchase of those things by name. We are purchasing them now under the general wording "For all emergencies and extraordinary expenses but impossible to anticipate or classify," but it was suggested by the Treasury that we insert that wording. It does not involve any extra money.

The CHAIRMAN. It is something you are already doing?

Col. McCawley. Yes, sir; you will see by reading the appropriation that it provides for almost everything you can think of in the way of contingent expenses.

The CHAIRMAN. Colonel, I will ask you to file with your hearings a statement giving the various items under the subheads of the expenditure under the \$460,000.

Col. McCawley. I have that here and will file it.

The statement referred to by Col. McCawley follows:

Estimates for Quartermaster's Department, Marine Corps, for fiscal year 1915, subhead "Contingent."

Freight, hauling, express, cab hire, and tolls.....	\$40,000
Extra-duty pay to clerks and messengers at staff offices.....	21,000
Extra-duty pay to clerks at posts.....	8,000
Extra-duty pay to mechanics at posts.....	13,000
Civilian labor.....	15,000
Telephone service.....	4,500
Telegrams and cablegrams.....	5,000
Water.....	15,000
Printing and binding.....	12,000
Laundry.....	12,000
Repairs and improvements to parade grounds, fences, grading roads, walks, gutters, and drains.....	30,000
Blank books and periodicals.....	5,000
Stationery, office supplies, and furniture.....	30,000
Horses and mules.....	5,000
Repairs and improvements to sewers, water, light, and heating systems.....	50,000
Barracks equipment, including furniture, stoves, ranges, mattresses, pillows, sheets, mosquito bunk nets, etc.....	65,000
Disinfectants and cleansers.....	10,000
Purchase and repair of vehicles and harness.....	20,000
Meat utensils.....	7,700
Burial expenses.....	1,000
Shoeing horses and mules.....	2,000
Furniture for officers' quarters, including repairs.....	15,000
Rewards for deserters.....	8,000
Equipage and implements for camp and garrison purposes, such as lawn mowers, sterilizers, wheelbarrows, lighting fixtures, carpenters' tools, tableware, fire extinguishers, spades, axes, picks, rakes, brooms, mops, etc.....	43,000
Advertising for proposals.....	600
Purchase, repair, and exchange of typewriters and computing machines.....	8,000
Packing and crating officers' baggage on change of station.....	1,200
Materials for packing and crating Government property.....	12,000
Postage stamps for registered and foreign mail.....	1,000
Total.....	460,000

The CHAIRMAN. I notice that you reduce the total for "maintenance of Quartermaster's Department, Marine Corps, \$54,937."

Col. McCAWLEY. Yes, sir. That comes out of the subhead of clothing.

Mr. ROBERTS. Last year, General, we appropriated some money for barracks and officers' quarters at Boston. How is that work progressing?

Gen. BIDDLE. There has not been anything done. There was \$100,000 appropriated for barracks for the men and \$48,000 for officers' quarters, but up to the present time the Secretary of the Navy has decided that he would not build them.

Mr. ROBERTS. How about the barracks at Philadelphia which we appropriated for?

Gen. BIDDLE. Those barracks are pretty well under way.

Mr. ROBERTS. And Puget Sound?

Gen. BIDDLE. The Secretary has held them up also.

Mr. ROBERTS. And at Pearl Harbor?

Gen. BIDDLE. He has held them up also.

Mr. ROBERTS. And the Isthmus?

Gen. BIDDLE. They have been held up. In fact, the marines are about to be withdrawn from the Isthmus. In fact, the most of them have been distributed among the ships at Vera Cruz.

Mr. ROBERTS. Is that a permanent withdrawal?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. You are not sending any more marines to the Isthmus?

Gen. BIDDLE. It is the present intention not to.

Mr. ROBERTS. Do you know whether the action of the Secretary in holding up the erection of barracks in the various yards of the country means that the marines are to be withdrawn from the yards?

Gen. BIDDLE. No. The Secretary does not intend to withdraw marines from navy yards, but has directed their reduction to 105 at each yard. Boston is to have 105 men, but I have no information to whether it is the intention to utilize any part of the \$100,000 which has been appropriated to construct barracks for the above 105 men, or any part of the \$48,000 for the construction of officers' quarters. Do you know anything about this, Colonel?

Col. McCawley. I do not know. I know the recommendation has been that the force be reduced to 105.

Mr. ROBERTS. Will that be a permanent force?

Col. McCawley. So I understand.

Gen. BIDDLE. That will be the entire force there.

Mr. ROBERTS. How about Puget Sound?

Gen. BIDDLE. That force comes down to 105.

Mr. ROBERTS. And for that reason they will not need the quarters?

Gen. BIDDLE. Puget Sound and Mare Island probably will be used in connection with the advance base station and the guard proper of the navy yard will be 105. At Mare Island we have a large recruit depot, where recruits are trained, and while the guard proper of the yard may be 105 there will be a much larger number of men there.

Mr. ROBERTS. If I understand you correctly, the policy of the department from now on will be to reduce the permanent force of marines in all of the navy yards?

Gen. BIDDLE. That is the general policy.

Mr. ROBERTS. Where are those marines going?

Gen. BIDDLE. They are to be used for advance base work.

Mr. ROBERTS. Just what do you mean by advance base work?

Gen. BIDDLE. Advance base work, generally speaking, is the preparing of the corps in all matters of drill and instruction so that it will be able to seize a harbor and prepare its defense from attack from both land and sea, so that an expedition can be landed in safety, and also that it may serve as a base for operations in the country invaded.

Mr. ROBERTS. Is it designed to keep those two regiments permanently at Culebra?

Gen. BIDDLE. No, sir. One regiment is established at Pensacola and the other at Philadelphia at present.

Mr. ROBERTS. Is it designed to keep a regiment permanently at Pensacola?

Gen. BIDDLE. I do not know the exact policy, but as far as we have been told one regiment will stay at Pensacola and one at Philadelphia. That is liable to change.

Mr. ROBERTS. When you withdraw the regiments from advance base work they have to go somewhere until ready to go out and do some more exercises?

Gen. BIDDLE. Yes, sir. They will be training for this work. It takes a great deal of preparation.

Mr. ROBERTS. What portion of the year are they engaged in this advanced base work?

Gen. BIDDLE. A portion of each winter.

Mr. ROBERTS. What portion; how many months?

Gen. BIDDLE. One, two, or three months.

Mr. ROBERTS. When they are through, they have to go somewhere?

Gen. BIDDLE. They go back to their stations.

Mr. ROBERTS. Where are they going if you reduce permanently the number of marines at the navy yards?

Gen. BIDDLE. As I understand, it is the intention to keep one regiment at Pensacola and another at the Philadelphia Navy Yard.

Mr. ROBERTS. In other words, Pensacola is to be made a permanent station for one regiment of marines?

Gen. BIDDLE. That is what I understand.

Mr. ROBERTS. You are withdrawing the marines from the Isthmus permanently?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. Where will they go?

Gen. BIDDLE. These regiments for advanced base work are on a skeleton basis now. It is designed to have them from 1,200 to 1,600 men. The men who come from the Isthmus would only bring the regiment at Pensacola approximately up to its full strength if they all went there.

Mr. ROBERTS. Is it necessary, General, to permanently reduce the number of marines in the navy yards in order to make a full regiment at Pensacola, when you consider that 400 of those men will come from the Isthmus?

Gen. BIDDLE. There are to be two regiments in the same way, the understanding is, on the Pacific coast, and I do not believe that we will have enough men to make them up even then. Quite a number of the men from the Philippines have been sent to Guam.

Mr. ROBERTS. How many men are in the Philippines at the present time?

Gen. BIDDLE. About 700. Next week I think 288 will go to Guam. It is probable in the first transport coming home in February that 150 will return and probably the following one 150, which will bring the number of men in the Philippines down to 150.

Mr. ROBERTS. One hundred and fifty will be left in the Philippines?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. How many were there before this distribution began?

Gen. BIDDLE. The number there was 1,100, but latterly a company was sent to Peking, and through one way or another they have fallen below that number.

Mr. ROBERTS. What becomes of these men who are taken out of the Philippines and out of the different navy yards in this country—where are they to be permanently stationed?

Gen. BIDDLE. They will go to the advanced base regiments which will take more men than are taken from the other places.

Mr. ROBERTS. How many men have you in the fleet, ordinarily?

Gen. BIDDLE. About 2,000 to 2,200, ordinarily, on the different ships.

Mr. ROBERTS. You have a total of 10,000 men?

Gen. BIDDLE. Just inside of 10,000.

Mr. ROBERTS. So you have about 7,800 men that are on shore?

Gen. BIDDLE. Yes, sir; about that number.

Mr. ROBERTS. You want two regiments for advanced base work?

Gen. BIDDLE. No. Four regiments, two fixed-defense regiments and two mobile regiments, one of each on each coast. That will make four regiments. The number in each regiment has not been finally determined. The Navy Department thought 1,250 sufficient, but we think it will be necessary to have 1,600 to carry it out.

Mr. ROBERTS. One thousand six hundred to a regiment?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. Assuming that you have 1,600 to a regiment and have four regiments, you would have 6,400 men?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. That leaves you 1,400 men?

Gen. BIDDLE. No, it will not; and to illustrate this I will embody in my hearing a table which will show the distribution of the corps as generally outlined by the general board, with certain modifications made by these headquarters based upon the necessities of the case, and which is now being effected as far as possible:

At sea.....	2,000
Foreign service.....	1,200
Recruit depots.....	1,320
Quartermaster's Department, recruiting offices, etc.....	500
Naval magazines.....	85
Marine Band.....	62
Apprentices.....	40
Prisons.....	1,030
Winthrop.....	75
Marine Barracks, District of Columbia.....	75
Navy yards.....	1,000
Advance base brigade, east coast.....	2,500
Advance base brigade, west coast.....	2,500
Total.....	12,387

It is believed that the above estimate of 1,250 men for each regiment of the advance base will be found, after the exercises at Culebra this year, inadequate, and that the figures submitted by these headquarters, 1,600 men for each regiment, will be more accurate.

Mr. ROBERTS. To carry out this advanced base work you want two of those regiments on each coast?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. One of them would be stationed at Philadelphia and the other at Pensacola?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. On the Pacific coast, where will the two regiments be stationed?

Gen. BIDDLE. The fixed defense regiment probably will be at Mare Island and the mobile regiment at Bremerton. That, however, has not been actually taken up and decided.

Mr. ROBERTS. If you are going to have a regiment of 1,600 at Bremerton, would you have to increase the quarters there?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. Not only quarters for officers, but barracks for the men?

Gen. BIDDLE. Yes, sir. The department is waiting until the exercises are over this winter before they announce any fixed policy for the Pacific coast.

Mr. ROBERTS. With regard to Pensacola, if you are going to station a regiment of 1,600 there, does not that mean additional buildings?

Gen. BIDDLE. There are a great many large buildings there—I have never seen them myself—but it is claimed that they will house a large number of men.

Mr. ROBERTS. Those buildings were erected for workshops?

Gen. BIDDLE. Yes, sir.

Mr. ROBERTS. And it would require a great deal of money to change them into quarters and barracks?

Gen. BIDDLE. We have altered the present buildings there occupied by 800 men at very small expense.

Mr. ROBERTS. Where are the officers' quarters?

Gen. BIDDLE. There are eight or nine houses belonging to the Navy that have been fixed up and some marine quarters. I suppose there might be a proper allowance for 10 or a dozen officers.

Mr. ROBERTS. How many officers will need quarters with 1,600 men?

Gen. BIDDLE. There would be about 59——

Mr. ROBERTS (interposing). Forty or fifty officers?

Gen. BIDDLE. Yes, sir; they would have to live in the town adjoining there and get commutation.

Mr. ROBERTS. Is the town of sufficient size to quarter those officers?

Gen. BIDDLE. I think it is a town of 20,000 people; quite as large as Vallejo, near the Mare Island Yard.

Mr. ROBERTS. You have to quarter officers at Mare Island in the town?

Gen. BIDDLE. Yes, sir; quite a number.

Mr. ROBERTS. The stationing of a regiment at Mare Island will require additional quarters?

Gen. BIDDLE. It will eventually. Most of our men there are under canvas. We have had them under canvas for some years.

Mr. ROBERTS. Is it desirable to keep men permanently under canvas?

Gen. BIDDLE. No; but they get along pretty well in that climate. I think they get along better under canvas there than at any station in the United States.

The CHAIRMAN. General, we are very glad to have had the pleasure of meeting you again and having you with us.

Gen. BIDDLE. I thank you.

(Thereupon the committee adjourned to meet on Monday, January 19, 1914, at 10.30 o'clock a. m.)

[No. 11.]

**THE COMMITTEE ON NAVAL AFFAIRS,
Monday, January 19, 1914.**

The committee met this day, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL JOSEPH STRAUSS, CHIEF,
BUREAU OF ORDNANCE.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Strauss, Chief of the Bureau of Ordnance.

Admiral, I notice in the item "Ordnance and ordnance stores," that the language is the same and the amount is the same as last year, \$5,800,000. Did you have any unexpended balance in that appropriation last year?

Admiral STRAUSS. No, sir; not last year.

The CHAIRMAN. Will you likely have any unexpended balance this year, or will you need the full amount?

Admiral STRAUSS. We will need the full amount. Whatever balance we have will be needed for the purchase or manufacture of powder; that is, to keep up our store of powder as has been the custom heretofore.

The CHAIRMAN. You use that for the powder factory?

Admiral STRAUSS. For the purchase of powder.

I would like to increase the amount available in the first proviso for classified labor, \$458,000, by \$25,000, or as much as the committee would allow, with a view to employing experts, if we can get them, notably one at the torpedo station to conduct experimental work, experimental mechanical work. I estimate that such a man can be secured for three or four thousand dollars a year. I have no idea that we will need the \$25,000 additional, but I think it advisable to have a little latitude over the \$458,000, which is all obligated.

The CHAIRMAN. What amount do you think you will need?

Admiral STRAUSS. It is very possible that we will be unable to get anybody and we will not need any of it.

The CHAIRMAN. What will be the minimum of increase that would answer your reasonable expectations and purposes?

Admiral STRAUSS. I should say \$10,000, sir.

The CHAIRMAN. That is to be used for procuring expert men in connection with the torpedoes?

Admiral STRAUSS. Yes, sir; in experimental work, principally in torpedoes or in any other direction.

The CHAIRMAN. The next item is, "Purchase and manufacture of smokeless powder, \$1,150,000," which is the same as last year.

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. There was a proviso inserted last year limiting the price not to exceed 53 cents a pound. Were you able to purchase powder within that limitation?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. How much powder did you purchase last year?

Admiral STRAUSS. Two million four hundred thousand pounds of the 1913 powder was purchased, at 53 cents per pound, although the appropriation at that time did not limit the price to be paid. Under the 1914 appropriation we bought 1,940,000 pounds, at 53 cents per pound, making the total Navy purchases amount to 4,340,000 pounds. The Army took 160,000 pounds, making 4,500,000 pounds purchased on the 53 cent basis. The price of small-arms powder was 75 cents per pound. The amount of small-arms powder purchased by both the Army and Navy together was 260,000 pounds.

The CHAIRMAN. At what price?

Admiral STRAUSS. At 53 cents a pound.

The CHAIRMAN. What amount of powder did you manufacture last year?

Admiral STRAUSS. We manufactured 1,827,369 pounds.

The CHAIRMAN. How much did you rework?

Admiral STRAUSS. We reworked 964,267 pounds.

The CHAIRMAN. The second proviso inserted last year provided that the factory at Indianhead should be operated on a basis of not less than its full maximum capacity. That became effective July 1, 1913, as I understand?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Has the factory been operated since that time at its maximum capacity?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What do you estimate to be the maximum practical capacity, taking into consideration delays and possible breaking of machinery, repairs, etc., what do you estimate to be the maximum capacity of the powder factory?

Admiral STRAUSS. For new powder 2,500,000 pounds per annum, and for reworked powder, 500,000 pounds.

Mr. BRITTEN. What is meant by reworked powder?

Admiral STRAUSS. We take powder that has become deficient in stability and grind it up in a mill, under water, and purify it as if it were newly made guncotton, and then work it up, shape it into powder by the regular process.

Mr. BRITTEN. What causes the powder to become deficient?

Admiral STRAUSS. It is due to the inherent instability of guncotton, which is the principal constituent of smokeless powder.

The CHAIRMAN. All powder heretofore has had a short life and you have been putting in a stabilizer with an unpronounceable name to me—

Admiral STRAUSS (interposing). Diphenylamine.

The CHAIRMAN. I want to ask you, Admiral, if the powder that contains that stabilizer is giving superior satisfaction to what it did prior to its use?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. How long have we been using that stabilizer?

Admiral STRAUSS. Nearly six years, without any indication of loss of stability.

Mr. FARR. What is the nature of the stabilizer?

Admiral STRAUSS. It is a complex chemical, one of the coal-tar derivatives, and we put in four-tenths of 1 per cent of the weight of

the powder. That seems to prevent the guncotton from breaking up chemically.

Mr. BROWNING. Mr. Chairman, did I understand the admiral to say that he had purchased 4,500,000 pounds of powder?

The CHAIRMAN. Yes; during the past year.

Mr. BROWNING. Was there a contract for that amount of powder, to get it at the price of 53 cents a pound?

Admiral STRAUSS. We made requisitions for the powder and of course there was but one bidder, the Du Pont Co. We entered into a contract with them.

Mr. BROWNING. Did you not enter into a contract with the Du Pont Co. for 5,000,000 pounds of powder at that price?

Admiral STRAUSS. There was an arrangement made by which they were to furnish it at 53 cents a pound, provided we bought a certain amount jointly between the Army and Navy.

Mr. BROWNING. Five million pounds, was it not?

Admiral STRAUSS. Four million five hundred thousand pounds.

The CHAIRMAN. There was a provision heretofore giving our Government in the amount of its purchases the benefit of the amount sold to one of the South American countries. Is that still in effect.

Admiral STRAUSS. The company wished to proceed on a basis of 5,000,000 pounds per annum, and included some South American orders to make up the shortage.

Mr. BROWNING. The subcommittee on fortifications of the Appropriations Committee had exhaustive hearings last year and I think Admiral Twining and Gen. Crozier stated that the price of powder manufactured by the Du Pont people was about 49 or 50 cents a pound?

Admiral STRAUSS. I understand that question was investigated last year and extensively gone into, and it was determined that the cost to the Du Pont people was about 48 cents a pound.

Mr. BROWNING. Forty-eight cents a pound?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. That is about 8 per cent profit, is it not, selling at 53 cents a pound?

Admiral STRAUSS. Ten per cent; a little more than 10 per cent.

Mr. BROWNING. Ten per cent. I thought it was 50 cents a pound. Do you not think that a profit of possibly 10 per cent is rather a small profit for the hazardous business of making powder?

Admiral STRAUSS. I am not prepared to discuss the question of the proper profit on the manufacture of powder.

Mr. BROWNING. You think that the making of powder is rather a hazardous business?

Admiral STRAUSS. No, sir; I can not say it is hazardous in the sense that the manufacture of black powder is.

Mr. BROWNING. We have in Gibbstown, N. J., one of the Du Pont powder mills, a dynamite mill, and it seems to me that every few months or every year it blows up and kills a lot of people. Only recently at that place, a few months ago, about two months ago, a mill blew up.

Mr. STEPHENS. Was the blowing up of these powder mills taken into consideration when the cost of making the powder was determined?

Mr. BROWNING. Yes, sir.

Mr. STEPHENS. That was reckoned as a part of the cost?

Mr. BROWNING. Yes, sir.

Admiral, do you not think it is very desirable that the Government have a chance to buy powder, especially in time of war, from more than one plant, their own plant, and that there should be independent plants to fall back on?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. Do you not think it rather hard to limit the price of powder to 8 or 10 per cent profit, even on a large amount?

Admiral STRAUSS. I really do not know, sir, what a proper profit on manufactured articles is. I suppose it varies greatly as between a substance like smokeless powder and an article of common use that everybody buys.

Mr. BROWNING. I have a statement of the reasons why the present Government's smokeless powder situation should be left undisturbed and also a statement indicating fair treatment, which I would like to have placed in the record?

The CHAIRMAN. Certainly.

(The statements referred to by Mr. Browning follow:)

REASONS WHY THE PRESENT GOVERNMENT SMOKELESS POWDER SITUATION SHOULD BE LEFT UNDISTURBED.

First. Because with two plants of its own and three commercial plants the Government not only has abundant capacity but the source of supply is so distributed as to protect the Government in any emergency. As the Government prepares the specifications for making the smokeless powder, supervises its manufacture, fixes the price to be paid for the finished product, and is able to keep close track of the cost of manufacture by reason of the operation of its own factories, it has absolute control of the powder situation at the present time.

Second. Because when the Government after experiments at Newport decided upon the present type of smokeless powder it called in manufacturers and turned the proposition over to them to perfect and make practical. As a result the du Ponts invested several million dollars in plants, processes, and machinery, having faith and confidence that the business would be a continuing one. The taking over of the manufacture of smokeless powder by the Government would greatly impair this investment. These plants can not be used in the manufacture of other kinds of explosives.

Third. Because, according to the tables submitted by Admiral Twining, Chief of Bureau of Ordnance, Navy Department, and Gen. Crozier, Chief of Ordnance, War Department, at recent hearing held by Subcommittee on Fortifications, House of Representatives, it was shown that the cost of the manufacture of smokeless powder to the du Ponts is approximately 49 cents per pound on a 5,000,000-pound output. The Government buys this powder for 53 cents per pound. This gives a profit of about 8 per cent, certainly not extravagant when the hazard associated with the manufacture of explosives is considered.

Fourth. Because the concentration of the manufacture of smokeless powder for the Navy at one point would be taking an undue hazard. Should the Government plant blow up or be otherwise destroyed in time of war the country would be helpless. New plants could not be built in a few days. It would require months to build and equip a smokeless-powder plant.

Fifth. Because, the taking over of this manufacture by the Government would impair present reserve manufacturing capacity. The du Ponts could manufacture all the powder they supply to the Government at one plant. In order to meet all possible demands in the event of war, they maintain three plants. Thus the Government has five splendid, up-to-date smokeless-powder plants upon which to rely in the event of war. It is no exaggeration to state that this feature of national defense is the only one that is complete and satisfactory and can be depended upon to meet any demand at any moment.

Sixth. Because approximately \$300,000,000 is expended annually on the Army and Navy and less than 1 per cent, or about \$3,000,000, of this vast sum goes for powder. Strange that all this sensational contention is made over the expenditure of this 1 per cent, while no question involving the expenditure of the 99 per cent is ever heard.

Seventh. Because little, if any, of the money appropriated by the Government for the purchase of smokeless powder is expended at the Government plants on experiments looking to the betterment of the quality. This work has been left to the du Ponts. In their laboratories they expend approximately \$500,000 annually, and a great deal of attention is given smokeless powder. This accounts for the fact that the United States leads the world in the general excellence of its powder.

Eighth. Because, taking into consideration the savings wrought by the system for the recovery of alcohol, for the reworking of powder, for the manufacture of small arms, etc., the actual value of the services the du Ponts have performed for the Government far exceeds the profits they have obtained from the Government.

Ninth. Because the Government looks to outside manufacturers for much else than smokeless powder in the way of explosives used for national defense. In many instances these explosives are perfected after much trouble and expense and turned over to the Government at actual loss.

Tenth. Because this Government is buying its smokeless powder 25 per cent per pound lower than any nation on earth buys a similar powder. The Du Pont Co. is selling powder in the markets of the world on this basis. It is not one of those companies that "sells abroad cheaper than at home."

Eleventh. Because Government monopoly is never advisable. France monopolizes the manufacture of smokeless powder, matches, and cigars. Admittedly it has the most inferior smokeless powder, matches, and cigars in the world.

Twelfth. Because the Du Pont Powder Co. probably enjoys the unique distinction of being the only concern selling the Government during the Spanish-American War that reduced the price of its commodity in the midst of the conflict.

INDICATING FAIR TREATMENT.

As evidence that the Du Pont Co. has not only been prompted by a spirit of fairness but a sentiment of patriotism in dealing with the Government, your attention to the following specific performances is called:

1. *Conduct in war.*—It is a matter of history that the Spanish-American War was postponed several months because the Government did not have powder with which to fight the war. It might be said that in this emergency the Government was at the mercy of the powder maker. The Du Ponts in this crisis did not advance the price. A contract for 5,000,000 pounds of brown prismatic powder, at 32½ cents per pound, was made with the Du Pont Co., and every force was concentrated to fill the order. Commercial plants were robbed to equip and strengthen the plants hastily constructed to make Government powder.

After many thousand pounds of powder had been delivered on this contract an advantage in the manufacture presented itself by the expiration of a royalty, and the cost of manufacture was reduced 3½ cents per pound, thereby reducing, in the midst of the conflict, the price of powder to 29 cents per pound.

The war came to an end sooner than was anticipated, and but 2,200,000 pounds of powder had been delivered on this 5,000,000 pound contract. The Government communicated with the Du Pont Co., inquiring upon what basis it would cancel the remainder of the contract involving 2,800,000 pounds. The Du Pont Co. answered that it would gladly cancel the contract without compensation, as it was anxious to concentrate its forces in supplying the demands of the industrial world.

Other concerns dealing with the Government during that war not only increased the price of the product furnished to the highest limit, but demanded extravagant sums in lieu of the cancellation of contracts. On the basis of other settlements made, the Du Pont Co. could have held the Government up for more than one-quarter of a million dollars on the cancellation of this contract.

2. *Dehydration by alcohol.*—This process for the replacement of water in guncotton by alcohol by use of a hydraulic press was invented and patented by Mr. Francis G. du Pont. It affords not only by far the most efficient and economical method for accomplishing this important step in the manufacture of smokeless powder, but what is more important, invests the entire operation with an element of safety that is beyond estimate in value. The use of this process was given to the Government without charge and the presses now in use by the Navy were made from our patterns.

3. *Recovery of alcohol.*—For a number of years the Government furnished the Du Pont Co. the alcohol entering into the manufacture of Government powder. Under the original process, once used, this alcohol was destroyed or escaped by evaporation. At its expense and risk, solely in the interest of economy to the Government, the Du Pont Co. perfected a process by which the alcohol was recovered and returned to the Government. The Du Pont Co. had the assurance that if it succeeded in perfecting a system for recovering this alcohol, the expense thus incurred would be made

good by the Government. The Auditor for the Navy Department declared this agreement not binding, and an itemized statement showing an expenditure of \$75,000 was turned down. This process was given for use in both Government plants, notwithstanding, without a cent's compensation, and has already resulted in saving the Government hundreds of thousands of dollars. This saving will continue as long as smokeless powder is manufactured.

4. *Reworking powder.*—Smokeless powder deteriorates with age and in time becomes unsuitable for use, resulting in large loss to the Government. The Du Pont Co. invented a process of reworking powder and handed this process over to the Government for use in both its plants without a cent's compensation. Hundreds of thousands of dollars have been saved to the Government by this process.

5. *A stabilizing material.*—Comparatively recently the Du Pont Co. brought to the attention of the Government the results of its inquiries and investigations with respect to a suitable stabilizing material for smokeless powder. This was adopted by the Government and more than doubles the life of this powder. This has not increased the price of powder to the Government, but has resulted in an enormous saving.

6. *Powder for small arms.*—Several years ago the Du Pont Co. perfected a powder for small arms by the use of which the life of the rifles used by the Government has been extended from 1,500 rounds to 15,000 rounds and the accuracy life of the rifle not yet reached. This powder, which was sold to the Government without any increase in price, gave to the 800,000 Government rifles an increased money value of approximately \$20,000,000. The du Ponts also gave the Government the right to manufacture this powder in its plants for a mere nominal royalty.

7. *Nitration of cotton.*—This company has invented new and valuable improvements in the methods of nitration of cotton. Ingenious mechanical devices have reduced greatly the cost of manipulation and improved the quality of the product. These improvements have been offered to the Government for a nominal consideration.

8. *Stability.*—The Du Pont Co. several years ago expended over \$400,000 to obtain for the Government a new powder which they and the officials of the Government thought of great value. They might have gone into the markets of the world and sold this powder at an enormous profit, but at the request of the Government the company kept this a secret without the Government bearing any portion of the burden. Gen. Crozier and Admiral Mason are familiar with this matter. By reason of improvements made in our smokeless powder the new powder mentioned is now useless and the investment to the company was a total loss.

9. *The Army powder plant.*—After Congress appropriated money to build a powder plant at Dover, following its policy of giving to the Government the free and unrestricted use of all it has and all it knows bearing upon the manufacture of powder, the Du Pont Co. invited the Government officials to their engineering department and gave them the use of every drawing it had. The company sent its engineers out to assist in laying out the Government plant. It is impossible to place an estimate on the value of the service rendered, the Du Pont Co. having spent hundreds of thousands of dollars in developing plans and economies that were freely given away.

10. *The pyro incident.*—As indicating the disposition of the Du Pont Co. to be fair and honest and "on the square" with the Government, I will relate an incident that occurred a few years ago: One morning the gentleman at the head of our operating department came to me and told me that he was greatly distressed and disturbed over something he had just discovered in our smokeless-powder plant at Haskell. He said that an employee, without intending to defraud the Government, had been detected switching samples of pyro sent to the Government for testing purposes—substituting former samples shown to be perfect. He did this in order that he might make a good showing in comparison with other factories. This man had been with us six years, and during that time there had been manufactured 3,000,000 pounds of powder with which he had come in contact. A meeting of our board of directors was called and the matter was submitted. I explained how if we were forced to take this powder back it would cost us well on to \$2,000,000. On the other hand, if the Government should use the powder and it should prove defective it might cost the Government ships and the lives of many men. There was no hesitation on the part of the board of directors. They instructed me to take the train at once for Washington and make a complete showing of what had been discovered. I got Admiral Mason and Gen. Crozier together and told them the story. Gen. Crozier said to me at the time that he had known many concerns to attempt to swindle the Government, but that this was the first instance in which he had known the principal to voluntarily confess a shortcoming. I requested that they should send officers to our plant to be present at an investigation. The committee

appointed by the Government reported that they believed the powder to be of satisfactory quality, but since the Government had not been furnished with samples of each lot of pyrocellulose used in the manufacture they required the Du Pont Co. to give them a guaranty of six years on life of the powder. No greater percentage of the powder went wrong through these years at this plant than went wrong at the other plants, including the Government plants; but this confession and guaranty cost the Du Pont Co. about \$50,000. (Col. Buckner's testimony at House hearing.)

Mr. FARR. What does it cost the Government to manufacture powder?

Admiral STRAUSS. It costs the Government about 38 cents a pound to manufacture powder.

The CHAIRMAN. What does that include, Admiral? I would be glad for you to be as specific as you can and as accurate as you can in stating what the actual cost is and the items that the cost includes.

Admiral STRAUSS. Yes, sir. In the first place, it costs almost exactly 30 cents for shop cost; that is, for material and labor, and the 8 cents comes in in overhead charges, salaries of officers and office expenses, disability pay, depreciation, tug and barge service, freight, powder boxes, and miscellaneous.

Mr. BRITTEN. The natural overhead charges that go with any plant?

Admiral STRAUSS. Yes, sir.

Mr. FARR. Does it include wear and tear?

Admiral STRAUSS. Wear and tear are included in the 38 cents.

Mr. BROWNING. Does it include any interest on capital invested?

Admiral STRAUSS. Interest on capital at 3 per cent adds 0.0221 per pound.

Mr. BROWNING. And any insurance?

Admiral STRAUSS. Fire losses; yes, sir. We do not insure.

Mr. BROWNING. How much is that?

Admiral STRAUSS. It is counted in in the shop cost.

Mr. WITHERSPOON. Did you mean that interest and insurance were included in the 30 cents or in the 38 cents?

Admiral STRAUSS. The 38 cents.

Mr. WITHERSPOON. But I want to know whether they are included in the 30 cents, the shop cost, or in the 8 cents?

Admiral STRAUSS. Fire loss is included in the overhead charges, where it is loss in plant, and in shop cost where stock is destroyed. The 3 per cent interest is outside of both of these items and makes the final cost \$0.40164.

Mr. BROWNING. After this exhaustive investigation by the Subcommittee on Fortifications of the House they came to the conclusion that the powder cost was 48 cents. How is it that the Government can manufacture this powder at 38 cents, a difference of 10 cents a pound?

Admiral STRAUSS. I want to correct that statement. It costs 40 cents a pound, including the 3 per cent for interest.

Mr. BROWNING. Even at 40 cents, that is 8 cents less than the Du Pont Co., and they have all the new machinery and everything else and help the Government all they can. How is it that the Government can manufacture this powder at 40 cents a pound, while it costs the Du Pont people 48 cents, at least that is the price brought out in the hearings, a difference of 8 cents?

Admiral STRAUSS. One difference of cost against the private manufacturer is the taxes which they have to pay. Their superintendence

is higher than the Government's. The salary of our officers who are running these plants is very much less than they would pay for the people running their plants. Other differences are accounted for in the upkeep of idle mills, experimental work, selling expense, and greater interest rate.

Mr. STEPHENS. In computing the cost of powder as made by the Government was any allowance made for injury to the human beings engaged in the work?

Admiral STRAUSS. Yes, sir.

Mr. STEPHENS. Was a similar allowance or some allowance made in the computation made by the private interests?

Admiral STRAUSS. Yes.

Mr. BROWNING. Does not insurance enter very largely into it? The du Pont people carry insurance on their plant. I do not think the Government insures.

Admiral STRAUSS. We do not insure.

Mr. BROWNING. You do not pay anything for insurance, and they do pay something for insurance. In my State they have an employees' liability act for people injured in these plants under which they have to pay a very heavy insurance.

Admiral STRAUSS. We allowed two one-hundredths of 1 cent a pound for disability pay—that is, at the proving ground—and we allowed interest at 3 per cent on the total investment and stock on hand, which increased the cost of manufacture by 2.21 cents per pound, making the total cost 40.164 cents per pound at the proving ground for the past year.

The CHAIRMAN. Is that your estimate of the present year or last year?

Admiral STRAUSS. That is for the last year.

The CHAIRMAN. How does the cost of manufacture for the past year compare with the year before?

Admiral STRAUSS. It was a very little cheaper last year.

The CHAIRMAN. Gen. Ciozier in his examination before the Committee on Appropriations with reference to ammunition for Coast Artillery, speaking of the manufacture at the Picatinny Arsenal, said:

I have prepared that information under the heading of "Ammunition for Coast Artillery," but it will come in just as well here. We add to that an increase, due to depreciation of machinery and buildings, fire loss, and rejections, as well as transportation service, enough to bring the cost up to 36.32 cents. Then we add to that for administration—that means the pay of officers and clerks not paid for out of the appropriation—and for interest on the value of the plant, enough to bring it up to 39.63 cents, which we regard as our total cost for the powder. That does not include what might be called the War Department burden; that is, the proportion of the expenses of the War Department here in Washington that might be properly charged to the manufacturing appropriations of the Ordnance Department, which would amount to about 3.6 per cent.

Now, have you in your estimates of the cost included any of the Navy Department costs?

Admiral STRAUSS. No, sir.

The CHAIRMAN. I will ask you, Admiral, to prepare an itemized statement and include it in your hearing, giving each item definitely and accurately, what is included in the 30 cents, what is included in the 40 cents, and then, if there are any items that are not included, to enumerate specifically those items so as to show what would be the

cost in comparison with commercially manufactured powder, and then what is the cost to us.

Admiral STRAUSS. I will insert a complete statement as follows:

DETAILED COST OF MANUFACTURE OF SMOKELESS POWDER AT THE INDIANHEAD FACTORY DURING THE FISCAL YEAR 1913.

The cost of a pound of new powder is calculated for the year as follows:

0.67138 pounds cotton, at \$0.0599366.....	\$0.04024
1.0109 pounds alcohol, at \$0.04778.....	.04826
2.4193 pounds sodium nitrate, at \$0.02712284.....	.06560
1.2344 pounds sulphur, at \$0.0108262.....	.01336
Production labor.....	.04691
Handling material, labor.....	.00369
Leave and holiday.....	.00745
Superintendence and clerical.....	.01177
Repairs, labor and material.....	.02170
Power expense.....	.02680
Other material.....	.01351

Invoice price.....	.29929
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NOTE.—The above are the items of cost which are directly charged to the appropriation covering the manufacture of powder.

Overhead charges.

(For fiscal year 1912.)

Powder boxes.....	\$0.01445
Administration (officers' pay and allowances).....	.00377
Pensions (disability pay).....	.00020
Expense charged to other appropriations.....	.01331
Depreciation.....	.03190
Insurance.....	.00000
Rejected powder.....	.00000
Experiments.....	.00000
Purchasing expense.....	.00146
Tug and barge service.....	.00841
Freight.....	.00675

Total overhead.....	.08025
Interest, calculated at 3 per cent on a plant value of \$1,146,171 and a value of stock in suspension of \$650,000.....	.02210

Summary.

Invoice price.....	\$0.29929
Overhead charges.....	.08025
Interest.....	.02210
Total cost.....	.40164

Statement of cost of smokeless powder at a private plant, using Indianhead invoice price for 1913 (\$0.29929) and overhead charges obtained from statement of Col. E. G. Buckner, representing the Du Pont Powder Co., before the Committee on Naval Affairs, Feb. 16, 1912.

Invoice price from Indianhead.....	\$0.29929
Interest at 5 per cent.....	\$0.05500
Depreciation of plants.....	.03323
Insurance.....	.00700
Rejected powders.....	.00600
Powder boxes.....	.01000
Freight.....	.00600
Tug service.....	.00200
	.11923

Pensions and personal liability.....	\$0.00830
Stock bonuses.....	.00150
Selling expense.....	.00620
Administration.....	.02540
Experimental.....	.00540
Idle mills.....	.00730
Taxes.....	.00110
	<hr/> \$0.05520
Estimated interest on stock in suspension, at 5 per cent.....	.47372
	<hr/> .01000
Total.....	<hr/> .48372

Assuming mill costs at the private plant to be the same as at the Indianhead factory the difference in cost of \$0.08208 is made up of the following items:

	Cost at private works.	Cost at Indianhead.	Decrease in cost at private works from cost at Indianhead factory.	Increase in cost at private works over cost at Indianhead factory.
Mill cost.....	\$0.29929	\$0.29929		
Powder boxes.....	.01000	.01445	\$.00445	
Administration.....	.02540	.00377		\$.02163
Pensions and disability pay.....	.00830	.00020		.00810
Expense charged to other appropriations.....		.01331	.01331	
Depreciation.....	.03323	.03190		.00133
Insurance.....	.00700			.00700
Rejected powder.....	.00600			.00600
Experiments.....	.00540			.00540
Purchasing expense.....		.00146	.00146	
Tug and barge service.....	.00200	.00841	.00841	
Freight.....	.00600	.00675	.00075	
Stock bonuses.....	.00150			.00150
Selling expense.....	.00620			.00620
Idle mills.....	.00730			.00730
Taxes.....	.00110			.00110
Interest.....	.06500	.02210		.04290
Total.....	.48372	.40164	.02638	.10846

Total increase.....	\$0.10846
Total decrease.....	.02638
Net increase.....	<hr/> .08208

From the proving ground mill cost should be deducted, for leave and holiday, \$0.00745, as the private manufacturer is under no expense for this item. This would make the final cost to the private manufacturer \$0.47627.

Mr. BROWNING. Does not the Du Pont Co., which you say is the only one which bid, have to deliver the powder to the Government?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. The freight is a considerable charge, is it not?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. Do you include anything in your estimate for the delivery or freight charges?

Admiral STRAUSS. Yes, we count that.

Mr. BROWNING. While you manufacture powder at Indianhead or at other plants you have to deliver it to different parts of the country, and I would like to know whether you include the freight charges the same as they do for delivery to the Government, and I would also like to know the difference in salaries paid by the Government to its employees and those paid in private plants.

Admiral STRAUSS. I will put that in as far as I am able to obtain the information.

Mr. BROWNING. Certainly; I do not want you to include anything that is not accurate.

The CHAIRMAN. What percentage of waste is there, Admiral, in reworking the powder?

Admiral STRAUSS. I think it is about 10 per cent.

The CHAIRMAN. What is the cost per pound of reworking powder?

Admiral STRAUSS. Our cost last year was 13.26 cents per pound.

The CHAIRMAN. Is the reworked powder as good as the original powder?

Admiral STRAUSS. So far as we have been able to ascertain, it is exactly as good.

Mr. FARR. What does the private concern charge you for reworking powder?

Admiral STRAUSS. They do not rework powder for us. We do all our own reworking.

Mr. BROWNING. I would also like to inquire, Admiral, whether you include in the cost to the Government the charge for the containers?

Admiral STRAUSS. Yes, sir; we do.

The CHAIRMAN. The next item, "For Naval Gun Factory, Washington, D. C.: New and improved machinery for existing shops, \$75,000," instead of \$125,000 appropriated last year. Will you need all of that amount?

Admiral STRAUSS. Yes, sir; I think we should have that amount.

The CHAIRMAN. Can you include in your hearings a statement of the character of machinery you contemplate purchasing?

Admiral STRAUSS. Yes, sir.

Machinery needed under appropriation "Naval Gun Factory."

NEW AND IMPROVED MACHINERY.

One 12-foot vertical boring and turning mill.....	\$9, 500
One milling machine.....	4, 000
Two engine lathes, 18-inch swing, 5-foot bed, \$850 each.....	1, 700
One wire feed screw machine with roller feed 1½ by 8 inches.....	900
Three lathes, 14-inch swing, 6-foot bed, \$548 each.....	1, 644
Two lathes, 12-inch swing, 5-foot bed, \$726 each.....	1, 452
Four lathes, 18-inch swing, 8-foot bed, \$1,064 each.....	4, 256
Two lathes, 22-inch swing, 6-foot bed, each \$800.....	1, 600
One 6-foot radial drill press.....	1, 200
One sandpaper grinding machine.....	625
Two 52-inch lathes, \$15,000 each.....	30, 000
One motor generator set and electric welding outfit.....	3, 000
One electrically driven power press, about 500 tons capacity.....	12, 000
Contingencies, such as electric cables for making connections to machines and smaller machines which can not be at this time definitely itemized....	3, 123
Total.....	75, 000

The above items are subject to change, but are as near as can be predicted at the present time.

The CHAIRMAN. And I will ask you also to put in the hearings a statement of the general expenditures under the first item, "Ordnance and ordnance stores, \$5,800,000."

Admiral STRAUSS. Yes, sir; I have it here.

Memorandum of appropriation "Ordnance and ordnance stores," showing principal items of expenditures for 1913.

Title.	
D. Repairs to vessels.....	\$217,593.85
E. Real estate and chattels (industrial).....	64,518.66
F. Machinery plant.....	162,617.01
G. Maintenance, yards and stations (industrial).....	182,423.18
N. Models and experiments.....	105,954.61
P. Repairs and equipage of vessels.....	86,907.06
Q. Repairs and alterations to ordnance equipage and supplies in store..	349,120.47
R. Real estate and chattels (military).....	261,421.79
S. Maintenance, yards and stations (military).....	995,930.86
T. Care and issuing of stores and maintenance of tugs and lighters....	142,890.00
V. Leave, holiday, and incidental expenses.....	628,788.77
Smokeless powder purchased.....	636,500.00
Black powder purchased.....	19,603.50
Cartridges for small arms.....	203,538.19
Armor.....	86,861.46
Range finders and battle-order instruments.....	16,663.91
Small arms and parts for.....	22,288.00
Lining guns.....	196,493.00
Torpedoes and mines, and parts for.....	32,854.76
Ponchos.....	27,200.00
Fuses.....	25,200.00
Air compressors.....	40,699.02
Cartridge-bag material.....	90,494.00
Optical instruments.....	12,052.80
Gun forgings.....	79,931.25
Target projectiles.....	136,152.00
Miscellaneous purchases and materials and manufacture at navy yards and stations.....	575,301.75
Total.....	5,400,000.00

The CHAIRMAN. I notice in the estimates new language, "New batteries for ships of the Navy," which seems to be a kind of heading. Do you know why that language is used? There is no appropriation put opposite it.

Admiral STRAUSS. That has been appropriated for each year in those terms.

The CHAIRMAN. The words "new batteries for ships of the Navy" seems to be new language which has been inserted, but it does not have with it any amount of appropriation?

Admiral STRAUSS. That is for modifying or renewing the breech mechanisms of the 3, 4, 5, and 6 inch guns.

The CHAIRMAN. It is just the heading for the language which follows?

Admiral STRAUSS. Yes, sir; this will be the fourth appropriation made for that purpose. The first appropriation was made March 4, 1911, and \$200,000 was appropriated at that time, but the appropriation was not made continuing and \$175,000 of it was turned back into the Treasury.

The CHAIRMAN. So that really only \$25,000 was consumed?

Admiral STRAUSS. Yes, sir; the next year the appropriation was \$125,000 and the next year \$75,000, making \$225,000 altogether. With this \$75,000 we will have \$300,000 for a project originally estimated to cost \$400,000, so that a saving will eventually result of \$100,000 on the general scheme.

The CHAIRMAN. How many breech mechanisms of the different guns will be included in that total, \$300,000?

Admiral STRAUSS. Three hundred 3-inch; three hundred and fifty 4-inch; one hundred and ninety 5-inch; two hundred 6-inch.

The CHAIRMAN. You have inserted the language "to be available until expended," which you mentioned a moment ago. Under the first appropriation of \$200,000 there was \$175,000 turned back because it was not made available until expended?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Please explain the method of this work so as to show why it can not always be used during the current year.

Admiral STRAUSS. The guns are not always available. The guns to be changed may be on ships that can not be called home for the work, and we may be bothered in that way in changing the mechanisms. We are taking all these old breech mechanisms and making them safe. That is what the whole scheme amounts to. As fast as the guns become available for the work we go ahead with it.

The CHAIRMAN. You may ask for an appropriation for a year, and the guns may not become available to go to the shops during that year, and therefore the money would not be used and would go back into the Treasury.

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What is the relative cost of modernizing or renewing the breech mechanism as compared with the original cost of new mechanism, and also are the modified or renewed mechanisms as good as the new ones?

Admiral STRAUSS. The modified mechanisms are just as good as the new ones. The scheme originally contemplated actually changing the breechblock itself in all the 4, 5, and 6 inch guns, but we found a way out of that by which a great deal of money could be saved and the guns made absolutely safe. With the 3-inch gun we had to change the breechblock itself.

The CHAIRMAN. What is the relative cost of modifying in comparison with new manufacture?

Admiral STRAUSS. I will insert that.

(The statement referred to is as follows:)

	Cost of modifying.	Cost of new breech mechanism.
3-inch.....	\$630	\$630
4-inch.....	150	850
5-inch.....	150	1,000
6-inch.....	150	1,200

Mr. WITHERSPOON. Is the sole object of the modifying or renewing of the breech mechanism to make the gun safe?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. It does not work any more rapidly?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. It does not improve anything except the safety?

Admiral STRAUSS. No, sir. The scheme consists of new mechanisms in arranging the breech mechanism, so that when the breechblock is closed, slammed to, that the firing pin will be eccentric from the primer. We had two serious accidents with the old style, and we

thought it best to change them and make the weapons safe for the men firing them.

Mr. WITHERSPOON. How many of the battleships have you renewed and modified these mechanisms on up to this time?

Admiral STRAUSS. I will insert that.

(The statement referred to is as follows:)

	Inches.		Inches.
Alabama.....	6 and 3	Birmingham.....	3
Georgia.....	3	Chester.....	3
Illinois.....	6 and 3	Chicago.....	3 and 4
Iowa.....	4	Columbia.....	6 and 4
Kearsarge.....	5	Minneapolis.....	6 and 4
Kentucky.....	5	Montgomery.....	4
Maine.....	3	Salem.....	3
Missouri.....	3	San Francisco.....	5
Nebraska.....	3	Castine.....	4
New Jersey.....	3	Helena.....	4
Ohio.....	3	De Luzon.....	4
Rhode Island.....	3	Machias.....	4
Vermont.....	3	Marietta.....	4
Virginia.....	3	Nashville.....	4
Wisconsin.....	6 and 3	Paducah.....	4
Brooklyn.....	5	Petrel.....	4
California.....	3	Princeton.....	4
Colorado.....	3	Vicksburg.....	4
Maryland.....	3	Wheeling.....	4
Tennessee.....	3	Wilmington.....	4
Washington.....	3	Buffalo.....	4
West Virginia.....	3	Mohican.....	4
Baltimore.....	6	Vestal.....	5

Also some guns in 6, 5, and 4 inch reserve batteries for mounting on auxiliaries in time of war.

Mr. BROWNING. Do you think it makes them absolutely safe?

Admiral STRAUSS. Yes, sir; I do.

Mr. BATHRICK. The firing pin under this new arrangement is entirely separate from the cap until the breech is fully closed, is that it?

Admiral STRAUSS. Until the breech plug is revolved. The revolution of the breech plug finally brings the firing pin just in the rear of the primer.

The CHAIRMAN. The next item is, "For replacing Mark VI 6-inch guns with Mark VIII guns, and repairing and modernizing the Mark VI guns for issue, to be available until expended, \$150,000," which is the same as last year. How much has been appropriated heretofore?

Admiral STRAUSS. On March 4, 1911, \$200,000; August 22, 1912, \$100,000; and March 4, 1913, \$150,000.

The CHAIRMAN. How many of those guns have been improved and modernized under this appropriation?

Admiral STRAUSS. All of the Mark VI guns of 2,600 foot-seconds velocity which we had afloat. The \$150,000 asked for will finish the work and modernize the remaining 28, there are only 28 left, and the whole bill will be less than \$600,000, as against \$630,000 estimated originally.

The CHAIRMAN. How many guns, all told, will that have improved?

Admiral STRAUSS. One hundred and thirty-two.

Mr. WITHERSPOON. Within the last four or five years, I think, the Oregon, Massachusetts, Indiana, and Iowa have been remodeled and

a great deal of money spent in fixing them up. When that was done were the guns on those ships modernized?

Admiral STRAUSS. The principal armament of the *Indiana* class was four 13-inch and eight 8-inch guns. Under this heading nothing was done to those guns. The *Iowa* has four 12-inch guns and eight 8-inch guns. Nothing was done to that ship's guns under this heading. It was for the great number of 6-inch guns which we have in the service that this work was designed.

Mr. WITHERSPOON. What about the other two ships?

Admiral STRAUSS. They are exactly like the *Indiana*, the *Oregon*, and *Massachusetts*.

Mr. WITHERSPOON. When they were fixing those ships why did they not do this work at one time?

Admiral STRAUSS. I think that project for modernizing the turrets of those four battleships was started before the necessity had become evident for changing the guns. I suppose you refer now to the safety change?

Mr. WITHERSPOON. Yes, sir.

Admiral STRAUSS. Those ships were modernized before the safety scheme was put on foot.

Mr. WITHERSPOON. What kind of guns were put on those four ships?

Admiral STRAUSS. Their regular main battery was retained on board, 13-inch guns.

Mr. WITHERSPOON. Were the same guns retained on them?

Admiral STRAUSS. The main battery is the same.

The CHAIRMAN. This item has nothing to do with guns above 6-inch?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. The other item has?

Admiral STRAUSS. No, sir; 3, 4, 5, and 6 inch guns.

The CHAIRMAN. The next item is "For liners for eroded guns, to be available until expended, \$100,000," which is the same amount as last year. That is a matter of continuing expense as you use the guns in practice?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Admiral, I will ask you to explain to the committee what is the present status, compared with the past, with reference to the erosion of the guns; what effect the powder that you are using has, and the rifling you are making in the lining and the cap on the shell, with reference to the eroding of the guns, and adding to the life of the guns?

Admiral STRAUSS. In the first place, the powder that we use is, so far as we are able to learn, the least erosive of any powder—that is, it is a nonnitroglycerin powder and erodes less than any powder containing nitroglycerin. We have made a great many experiments with bands and shells which lessen the erosion and provide for proper rotation of the projectile when the gun is worn. That tends to increase the life of the gun. We have rearranged our rifling so the erosive effect is less, and now have no difficulty in firing from our larger guns 175 rounds without serious loss of velocity or direction.

Mr. BATHRICK. Does that increase the number you were previously able to fire?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. How much?

Admiral STRAUSS. At one time they only estimated 100 rounds until they improved the rifling.

Mr. BATHRICK. Was that brought about by lessening the pitch of the rifling?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Do you get the same revolution?

Admiral STRAUSS. Yes, sir; finally, but we have an increasing pitch.

Mr. BATHRICK. Increased toward the muzzle?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. It does not start off with so much friction?

Admiral STRAUSS. No.

Mr. BATHRICK. Did you soften the material in the band?

Admiral STRAUSS. No, sir; it is quite hard. It is a copper and nickel alloy.

Mr. BATHRICK. Did you harden it?

Admiral STRAUSS. Yes, sir; it is harder.

Mr. WITHERSPOON. How many guns on the ships become so eroded that they have to be relined every year?

Admiral STRAUSS. We estimate that it will take about six years to erode the turret guns before the necessity for relining takes place.

Mr. WITHERSPOON. What I am trying to get at is how many guns do you have to reline every year?

Admiral STRAUSS. We can reline now 26 of the largest guns per annum. We are not quite doing that. We relined 22 large guns last year.

Mr. WITHERSPOON. How many wear out so as to make it necessary to reline them every year, more than 26?

Admiral STRAUSS. There will be; yes, sir; eventually.

Mr. WITHERSPOON. More than that number?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. More than you have the capacity to reline?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. How many times do you have to shoot the big guns before it becomes necessary for you to reline them?

Admiral STRAUSS. About 175 rounds of the 12 or 14 inch guns.

Mr. WITHERSPOON. Makes it necessary to reline it?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. How many times in target practice do you shoot each one of those guns a year?

Admiral STRAUSS. We fire the equivalent of 12 full rounds, so far as erosion is concerned, each year from each gun.

Mr. WITHERSPOON. Twelve into 175 goes about 14 times, which would make a gun last about 14 years under target practice?

Admiral STRAUSS. Yes, sir; but we do not wait until a gun is worn out.

Mr. WITHERSPOON. How many times can the gun be shot with the same accuracy and power?

Admiral STRAUSS. One hundred and seventy-five rounds.

Mr. WITHERSPOON. Do you mean to say that it will shoot with the same accuracy and power until you have shot it 175 rounds?

Admiral STRAUSS. The power drops a little, but it is quite as accurate at 175 as it is at the beginning, practically so. The only dif-

ference is that you will require a little more powder as the shooting goes on, and that is all arranged for.

Mr. HENSLEY. Right in that direction, have you information to give us as to how rapidly the gun would deteriorate after it has reached the 175 limit? After you have fired that many shots from it, what per cent does it deteriorate?

Admiral STRAUSS. After that the shell wobbles in flight so that you can not be sure that the shell will reach the target.

Mr. HENSLEY. Not immediately after you pass the 175 rounds?

Admiral STRAUSS. No, sir; it is not as exact as that. Under certain circumstances it might be 175 or it might run to 180.

Mr. HENSLEY. Have you gone beyond the 175 rounds so as to ascertain about how rapidly it deteriorates after reaching that point?

Admiral STRAUSS. We have gone beyond that, but the shell becomes unmanageable in flight at 175 rounds or thereabouts, giving no assurance that it will have the necessary accuracy.

The CHAIRMAN. That is all a question of average?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. You figure that it is necessary in target practice in order to keep up the accuracy of the gunners to fire all of the guns twelve times a year?

Admiral STRAUSS. That has been determined by the department.

Mr. BATHRICK. They have determined it is necessary to do that in order to keep up the efficiency in firing?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Have you any information as to how many times the foreign governments shoot each one of their guns every year in target practice?

Admiral STRAUSS. No, sir; nothing very exact.

Mr. WITHERSPOON. What is the best information you have?

Admiral STRAUSS. The best information is—the only people we can learn much about are the English, and I believe we are about even with them in target practice as to the extent of firing.

Mr. WITHERSPOON. A naval officer told me that he believed we were spending \$100 in target practice where any other nation was spending \$1. You do not think that is accurate?

Admiral STRAUSS. No, sir; I do not.

Mr. HENSLEY. I want to get in my mind a little clearer one proposition, and that is this: I do not think you quite understood me. I was not happy in expressing myself. After you have passed the 175 shots, a gun deteriorates very rapidly, does it not?

Admiral STRAUSS. It deteriorates from the outset. After you fire five rounds and the gun has been starganged, we find that the gun has actually been worn, but the wearing does not lessen the accuracy until we get up to about 170 or 175 rounds. Then we find that the shell is no longer going true. In other words, the wear is just enough to stop the usefulness of the gun.

Mr. HENSLEY. I understood you to say awhile ago that up to 175 it was not materially affected?

Admiral STRAUSS. The gun is materially affected. This wear is progressive from the very outset; each shot contributes its amount; but after 175 rounds the wear then becomes so much that the shell no longer flies true and we have to reline the gun.

Mr. BROWNING. I understood you to say that you did not wait until the 175 rounds?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. But that you relined the gun after 75 rounds?

Admiral STRAUSS. Yes, sir; we have at the proving grounds what they call the type gun, and all these points are worked out there.

Mr. WITHERSPOON. Admiral, how much do the 14-inch guns that we are now constructing cost?

Admiral STRAUSS. About \$60,000.

Mr. WITHERSPOON. How much did the 12-inch gun cost a few years ago; more than that?

Admiral STRAUSS. The 12-inch of similar length cost less; about \$52,000.

Mr. WITHERSPOON. You do not think there has been any lessening of cost of the construction of the large guns?

Admiral STRAUSS. Of course, the 14-inch gun weighs very much more than the 12-inch gun, and the 14-inch gun should cost more than the 12-inch gun.

Mr. WITHERSPOON. But we are not constructing any more 12-inch guns?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. I am trying to get at a comparison of the cost of the 14-inch gun with what the 12-inch gun used to cost?

Admiral STRAUSS. The latest 14-inch 45 caliber costs \$57,800; 12-inch 45 caliber costs \$51,700.

Mr. WITHERSPOON. How much does it cost to reline one of the large guns?

Admiral STRAUSS. About \$10,000.

Mr. ROBERTS. Have any experiments been made or any data collected showing the effect on a gun of a considerable number of shots being fired as rapidly as could be fired from the gun?

Admiral STRAUSS. There have been with the smaller guns and to a certain extent with the large guns. With the 3-inch gun, firing a shell weighing 13 pounds, they have worn the gun out in a few minutes by rapid fire.

Mr. ROBERTS. In other words, if two or three rounds were fired to-day and a week or a month from now two or three rounds more the gun would last much longer than if a large number of rounds were fired consecutively and as rapidly as the gun could be worked?

Admiral STRAUSS. It would; especially with the very small gun.

Mr. ROBERTS. I want to ask you what the effect would be theoretically or practically, if you have the data, if you should fire a 12 or 14 inch gun 25 or 30 or more rounds consecutively and as rapidly as the men could work?

Admiral STRAUSS. The erosion would increase, undoubtedly.

Mr. ROBERTS. It would increase much faster than if the shots were divided into groups of five at long intervals?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. The theory is, if I understand, that the gun gets so heated that the metal is not able to stand the strain put on it as readily as if the metal were not heated first?

Admiral STRAUSS. The erosion—that is, the wearing out of the gun—is caused by a thin film of the bore heating up and in the soft condition the surface of the metal is worn off with each shot.

the shots follow each other very rapidly it is presumable that the amount of wear will increase, but there will be, no matter how leisurely you fire the shots, erosion for every shot fired.

Mr. ROBERTS. I realize that, but I was leading up to ask this question: Do you suppose that our 12 and 14 inch guns would stand the firing of 100 shots consecutively without going to pieces?

Admiral STRAUSS. Yes, sir; I think they would. It might cut it down a little, but I can not conceive of a long battle, firing 100 rounds, being conducted at the rate of fire usual in target practice. I think the rate in battle would be considerably less.

Mr. ROBERTS. There would be intervals in the firing of the 100 rounds that the guns could be rested?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. If each gun was fired 100 rounds and the shells struck the enemy's ships, there would not be much to shoot at after the 100 rounds?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. We are not making any more 12-inch guns?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. Have we enough 12-inch guns for reserve to take the place of those aboard ship in case of accident?

Admiral STRAUSS. Yes, sir. We have a sufficient reserve for the guns afloat, and taking any one class of ships this allows us to replace the worn guns and to bridge over the interval required for relining.

Mr. ROBERTS. And to take care of accidents?

Admiral STRAUSS. Yes, sir; and to take care of accidents.

Mr. ROBERTS. What I do not understand clearly is this: We have a great many 12-inch guns in the service.

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. In time those guns will become entirely worn out?

Admiral STRAUSS. We think not. We have no reason to believe that there is any limit to the number of times that you can reline a gun.

Mr. WITHERSPOON. Do you think that shooting each gun 12 times a year is sufficient target practice for the men to acquire the highest possible skill.

Admiral STRAUSS. The number 12 I gave you is not the actual number of shots fired. We fire a number at three-fourths charge; they are known as reduced charges.

Mr. ROBERTS. That is, the elementary practice?

Admiral STRAUSS. Yes, sir. That only has one-quarter the erosive effect that a full charge has and the calculated result of the whole is that we fire 12 full charges, so far as erosion is concerned.

Mr. WITHERSPOON. The point I wanted to get at is whether the shooting we do is enough, in your judgment, to give the men the highest possible skill, or do you think it should be increased?

Admiral STRAUSS. I think we have struck a fair mean between giving the men enough instruction and the desire to conserve the batteries and also not to make too big a drain on the Treasury. I do not doubt that if the men had more practice that it would benefit them, but we think we get good results from the amount we now give them. The amount is arranged as between the desires of the target office and the ability of the Ordnance Department to supply the ammunition and guns.

Mr. WITHERSPOON. Last year we cut down the appropriation for that purpose, if I remember correctly, \$400,000 below what Admiral Twining asked for. I want to know what your judgment is about that. Ought we to make it larger, or did we give enough last year?

Admiral STRAUSS. I think it was about right last year. There was an increase of—

The CHAIRMAN (interposing). We gave an increase of \$400,000 or \$600,000.

Admiral STRAUSS. \$300,000.

Mr. HENSLEY. \$400,000 less than Admiral Twining asked for.

The CHAIRMAN. About \$200,000.

Mr. ROBERTS. Admiral, suppose Congress were to appropriate \$500,000 more for target practice than they appropriated last year, would that be expended?

Admiral STRAUSS. It could be expended.

Mr. ROBERTS. Is it likely that it would be expended?

Admiral STRAUSS. It would be expended; yes, sir.

Mr. ROBERTS. We might to advantage have more target practice than we are now having?

Admiral STRAUSS. Undoubtedly. The more you practice at the guns the more proficient the men would become, not only the men, but the whole management of the ships doing this work. You gentlemen who have witnessed target practice will appreciate that.

The CHAIRMAN. At the same time you would multiply the other costs very much?

Admiral STRAUSS. The increased cost would of course lie in the increased expenditure for ammunition and the reduction of the available life of a gun for battle.

Mr. ROBERTS. Are all the 12 and 14 inch guns fired each year at a long range, battle range?

Admiral STRAUSS. Yes, sir; the 12-inch guns. We have not fired the 14-inch guns.

Mr. ROBERTS. How many times a year do they fire at battle range?

Admiral STRAUSS. Twice a year.

Mr. ROBERTS. Each gun?

Admiral STRAUSS. There are three target practices.

Mr. ROBERTS. Some of the target practices are elementary, where you fire with the three-fourths charge. What proportion of the target practice is at battle range, several thousand yards?

Admiral STRAUSS. At least two-thirds at the long range.

Mr. ROBERTS. Each gun?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Admiral, I wish to call your attention to a statement which I have noticed in the Scientific American in its issue of Saturday, January 3, 1914, in which this statement occurs:

With the exception of the British Navy, which has more than doubled the accuracy of its fire by the introduction of the fire-director system of Sir Percy Scott, our shooting is believed to be as good as that of the other leading navies.

I wish to call your attention to that statement and to ask you what you have to say in reference to it. Do you agree with that statement?

Admiral STRAUSS. No, sir; We, of course, know about the director system. This last fall we fired a large number of shots from the *Delaware* by that system with not very promising results. We do not consider the experiment conclusive, and propose now to have

another test of firing with the same ship, which will be available for this work. Those who have studied the results of this shooting are not very enthusiastic about it.

Mr. WITHERSPOON. What is that system? I do not understand it.

Admiral STRAUSS. Under the existing system each gun is elevated by one man and trained by another.

The elevating is the part of the work requiring greatest skill. Scott's idea is to reduce the number of pointers by having one man of the highest skill elevate all the guns. Of course, he does not do it himself, but he directs the elevation. The plan calls for an exact datum line for all of the guns, so they can be laid at the same angle of elevation. Now, the director has a telescope of his own which he sights on the target, and he has arranged this telescope with reference to the datum line for all the guns so the guns are elevated according to his direction and elevated exactly the same, and when the cross wires of his telescope are on the target he fires them all. The whole scheme is to concentrate the most important work in the most highly skilled man; in other words, to reduce the number of skilled men you require.

Mr. ROBERTS. How about the training of the guns?

Admiral STRAUSS. The trainer has to keep the gun trained.

Mr. ROBERTS. He has to have separate trainers for each gun?

Admiral STRAUSS. Yes, sir; but the training is the less important of the two operations.

Mr. ROBERTS. The less important, but at the same time it has quite a vital bearing on the net result?

Admiral STRAUSS. Yes, sir; but that can not very well be arranged for.

Mr. BATHRICK. These gunners enlist for four years?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Have you any data as to what proportion of them leave the Navy after the first enlistment?

Admiral STRAUSS. I have not. The Bureau of Navigation has, I believe, very exact data on that point.

Mr. BATHRICK. I would like to know what proportion of the gunners leave after the first enlistment?

Admiral STRAUSS. Probably something in the neighborhood of 40 per cent.

Mr. BATHRICK. Are most of the gunners first or second enlistment men?

Admiral STRAUSS. I can not get data to enable me to give an exact answer.

Mr. BATHRICK. I think that would be very interesting for this reason: We are expending not only the time necessary to train these men in the turrets to shoot straight, but we are expending a very large sum of money for ammunition and guns in that training, and it occurs to me that it is very necessary for the efficiency of the Navy that the men upon whom we are expending this large sum should have encouragement to remain in the Navy.

The CHAIRMAN. There is also one other phase to it, is there not, Admiral, when they retire and others are trained, if an emergency should arise they would be a valuable reserve?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Does this reserve consist of men who are as well trained as those who have had the experience in the turrets that you speak of?

Admiral STRAUSS. You mean an organized reserve?

Mr. BATHRICK. Yes, sir.

Admiral STRAUSS. They have not been organized, but some inquiries have been made on the subject.

Mr. BATHRICK. If those men were to remain in the Navy and have additional training which they would not have if they retired from the Navy, they would be better gunners?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. In other words, more practice would be conducive to greater perfection?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. In the advancement of gunners, leaving that grade, which ever it is, do they leave the turret and go into higher positions where they are not required to train the guns?

Admiral STRAUSS. We usually try to keep a good gun pointer in that billet and he has rewards sufficient to make him wish to stay there. Of course, if he shows marked ability—some become gunners and some chief petty officers not pointing guns—we do not allow this skill to interfere with their own advancement.

Mr. ROBERTS. To return to the gun pointing, if I understand our system, the man who elevates the gun is called the gun pointer?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. When at practice and substantially when in battle he keeps the gun on the target all the time?

Admiral STRAUSS. He tries to.

Mr. ROBERTS. He tries to keep the gun on the target all the time while loading and firing. Under this English system, with the guns scattered from bow to stern of the ship, how can the other guns in the turret be made to follow the telescope of this chief gun pointer, if I may term him as such?

Admiral STRAUSS. The principle of continuous aim can not be maintained.

Mr. ROBERTS. Under the English system the single gun pointer has his telescope bearing on the target presumably all the time?

Admiral STRAUSS. He does in train.

Mr. ROBERTS. How does he get the various guns elevated or depressed so that they will be in synchronism with his telescope?

Admiral STRAUSS. He does not. He has to pick up the target.

Mr. ROBERTS. Do you believe that is as good a plan as ours, where we keep the gun on the target all the time?

Admiral STRAUSS. We are not always successful in keeping it on the target. It undoubtedly is not as good as ours if we are able to keep our sight on the target all the time.

Mr. ROBERTS. We have pretty good results, taking it by and large.

Admiral STRAUSS. We have good results in target practice, but, I think, perhaps, we take advantage of the roll very largely.

Mr. ROBERTS. Would not that be true with this system as well?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. The practice they are getting would be of material benefit. If I am right in this supposition that the gun pointer can

keep his sight on the target all the time, he is able to pick the target up quicker and the gun can be fired more rapidly?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Obviously under our system the gun can be fired more rapidly than under this English system?

Admiral STRAUSS. I think so.

Mr. ROBERTS. And the great consideration is to get the most shots on the enemy?

Admiral STRAUSS. To hit the most often; yes, sir.

The CHAIRMAN. With the information you have of the system and this statement that the English target practice is far in advance of ours, is that accepted as an accurate statement?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. Do we know at what range the target practice of other nations is conducted?

Admiral STRAUSS. We have a pretty good idea.

Mr. WITHERSPOON. I have heard it stated that they did not have the amount of target practice at battle range that we have. What about that?

Admiral STRAUSS. That is possible. I do not fancy that the first-class nations differ very much in the matter of range at target practice.

(Thereupon the committee adjourned to meet to-morrow, Tuesday, January 20, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Wednesday, January 21, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL JOSEPH STRAUSS, CHIEF,
BUREAU OF ORDNANCE—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Strauss.

The first item is "For modifying 5-inch 50-caliber Mark V guns, \$65,000," which is the same as last year, Admiral?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. How much has been appropriated for that purpose altogether?

Admiral STRAUSS. So far \$140,000.

The CHAIRMAN. Will this complete that work, that is, up to what we have? Of course, guns will have to be modified in the future.

Admiral STRAUSS. Yes, sir; this will complete it. That is my expectation now, that the \$65,000 will complete that task.

The CHAIRMAN. How many guns of this type have been modified under the other appropriations, and how many will be modified under this appropriation?

Admiral STRAUSS. There were 87 originally; 50 remained to be altered last June.

Mr. ROBERTS. Do I understand that this appropriation will complete the work on the 5-inch guns?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. The next item is "Ammunition for ships of the Navy"; and I notice that you have reduced that by a little less than \$300,000?

Admiral STRAUSS. Yes, sir; that estimate has been reduced, and I want to say that we are prepared now to reduce it still further, in view of the price paid for a recent purchase of shell.

The CHAIRMAN. How much further can it be reduced; to what amount?

Admiral STRAUSS. If we can get shell during the coming year at the price of those recently purchased, we can reduce it \$400,000.

Mr. ROBERTS. Do you think that you can do it?

Admiral STRAUSS. I think it is probable that we can.

Mr. BUTLER. Is it safe to make the reduction?

Admiral STRAUSS. If you do make the reduction and we find that the price in the future is higher, of course you would have to appropriate the additional money. The necessity for having these shells is not immediate, and I think we could take the risk.

Mr. ROBERTS. That would make it \$3,174,000?

Admiral STRAUSS. The total is \$3,178,890.

Mr. BATHRICK. That is your estimate?

Admiral STRAUSS. That is the estimate.

Mr. BATHRICK. The estimate in the bill is more than that?

The CHAIRMAN. The admiral said that on account of the recent purchases it could be reduced.

Mr. BUCHANAN. Does the Government manufacture any of its own shells?

Admiral STRAUSS. No, sir.

Mr. BUCHANAN. Has it ever tried?

Admiral STRAUSS. We are trying now at the navy yard and have given an order to manufacture two shells as an experiment. It is a special industry that we, so far, have not engaged in.

Mr. ROBERTS. Just what do you purchase under this head, "Ammunition for ships of the Navy?" Do you purchase any powder?

Admiral STRAUSS. Yes, sir; the statement here calls for \$376,000 for powder.

Mr. ROBERTS. \$376,000?

Admiral STRAUSS. For powder for ammunition for the new ships. We purchase all of the ammunition and fit out a new ship from this appropriation; that is, powder, shell, powder containers, the copper tanks, fuses - - -

Mr. ROBERTS (interposing). Explosives for the shell?

Admiral STRAUSS. Explosives for the shell, etc., and pruners.

The CHAIRMAN. This is the appropriation which is intended for equipping the ships with ammunition when they first go into commission?

Admiral STRAUSS. Yes, sir.

Mr. GRAY. What was the appropriation for this item last year?

The CHAIRMAN. \$3,850,000.

Mr. GRAY. Was that appropriation all consumed?

Admiral STRAUSS. Yes, sir; it will be used. We have saved a considerable part of that appropriation on account of the reduced price of the shell, but the money will be needed, and we will purchase ammunition for the ships with the money saved.

Mr. GRAY. This appropriation is consumed in target practice?

Admiral STRAUSS. No, sir. This ammunition fits out the new ships. It is their first ammunition outfit. The armor-piercing shells remain on the ship as long as she is in existence unless used in battle.

Mr. GRAY. What is the amount of ammunition consumed by the Navy in a year?

Admiral STRAUSS. We estimate the amount consumed at target practice this year at \$1,300,000.

Mr. HENSLEY. Will you please state what has effected the reduction in the price of shell, which enables you to suggest this saving?

Admiral STRAUSS. I have asked the shell makers why they reduced their prices, and they say that they need the work. I fancy that the competition from abroad on the previous contract had something to do with it.

Mr. HENSLEY. Do you not also think that the proposed idea that the Government would engage in the manufacture of shells has had something to do with it?

Admiral STRAUSS. Possibly.

Mr. BRITTEN. Where are the shells manufactured, Admiral?

Admiral STRAUSS. Some of them are manufactured just below the navy yard at Giesboro Point on the Potomac River, some at Harrison, N. J., some at Bethlehem, and others at Midvale.

Mr. BRITTEN. What proportion of the shells used does the Government manufacture?

Admiral STRAUSS. We do not manufacture shells.

Mr. BRITTEN. Do we not manufacture any shells?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. You say that the word "ammunition" includes the powder that we purchase?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Does it include all of the powder that we purchase?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. There is a separate appropriation in this bill for powder?

Admiral STRAUSS. That is to take care of powder to provide deficiencies for ships already built but which did not have on board or provided for, the amount that the Navy Department considers sufficient. In other words, it is to make up deficiencies of powder and also to provide the powder for target practice.

The CHAIRMAN. And also for reserve powder?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. How much powder does this appropriation and the other appropriation in this bill provide for?

Admiral STRAUSS. 3,810,000 pounds from "Purchase and manufacture" combined with that under the heading "Ammunition for ships."

Mr. WITHERSPOON. How much powder do we manufacture a year at our own factory?

Admiral STRAUSS. We will manufacture next year about 2,500,000 pounds of new powder and will rework about 450,000 pounds of powder.

Mr. WITHERSPOON. That is more than we will consume within the year, is it not?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. We have in process of construction four battle-ships that will use the 14-inch shell?

Admiral STRAUSS. And the two afloat, the *Texas* and the *New York*.

Mr. WITHERSPOON. Are they afloat?

Admiral STRAUSS. They are almost in commission.

Mr. WITHERSPOON. That will be six battleships that will use the 14-inch shell?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. So far as buying new shells is concerned this appropriation is confined to the 14-inch shell?

Admiral STRAUSS. All of the larger ones; yes, sir.

Mr. WITHERSPOON. That is what I was speaking about, the larger ones.

Mr. BRITTEN. Have not some shells been bought abroad?

Admiral STRAUSS. We bought 500 12-inch shells there last year.

Mr. BRITTEN. Where did they come from?

Admiral STRAUSS. From the British firm of Hadfield & Co.

The CHAIRMAN. They were bought largely for experimental purposes and test purposes, were they not?

Admiral STRAUSS. They were bought with some misgivings that the firm could furnish the shells, but they turned out to be good shells.

Mr. BUCHANAN. What was the cost in comparison?

Admiral STRAUSS. The cost was considerably lower than the price paid for shells of home manufacture.

The CHAIRMAN. Can you put the exact figures in the hearing?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. How does that price compare with the recent contract?

Admiral STRAUSS. It is \$22 higher than the recent contract.

Mr. TALBOTT. \$22 per shell?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Higher than the last contract made?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Are you expecting to purchase any 4-inch shells out of this appropriation?

Admiral STRAUSS. Yes, sir. We purchased 12-inch shells at about \$274 apiece and Hadfield bid \$187

Mr. BATHRICK. They were good shells?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What was the price at which you recently purchased, \$177?

Admiral STRAUSS. Recently we purchased them as low as \$165.

Mr. BUCHANAN. What was the price previous to this?

Admiral STRAUSS. \$274 at home and \$187 from Hadfield. Recently Hadfield bid \$195 and was underbid by American firms.

Mr. ROBERTS. One other question in regard to the powder that will be purchased under this appropriation. Will you purchase that powder from the Indianhead factory or from private concerns?

Admiral STRAUSS. The powder manufactured at the Indianhead factory will all come out of the appropriation "Purchase and manufacture of smokeless powder," one of the first items discussed.

Mr. ROBERTS. I understand that. I understand that you expect to expend \$376,000 for smokeless powder. Will you take that from the Indianhead factory and turn the money over to the Indianhead factory appropriation?

Admiral STRAUSS. No; that powder will be bought outside.

Mr. BUCHANAN. Has the Indianhead plant been run to its full capacity?

Admiral STRAUSS. It has always been run to its full capacity.

Mr. BATHRICK. One shift?

Admiral STRAUSS. No, sir; three shifts.

Mr. BUCHANAN. That was not the information we had previously.

Admiral STRAUSS. I did not know that they had ever reduced the number of ships, except for cause—part of the plant breaking down.

Mr. BUCHANAN. I offered an amendment to the effect that it should not be run less than its maximum capacity.

The CHAIRMAN. That became effective July 1, and the admiral stated that since July 1 they had been running the factory at full capacity.

Mr. BATHRICK. I would like to inquire whether they produce three times as much powder as they did on one shift?

Admiral STRAUSS. I do not think they ever ran at one shift at the powder works. I was in charge of it five years myself, on two different occasions, and we never ran anything but all shifts while I was there. One building would be disabled for some cause or another, and that might interfere with the flow, but we ran three shifts for the five years that I was in charge of the plant.

Mr. WITHERSPOON. You stated that these battleships would soon be useless. I would like to know why?

Admiral STRAUSS. They become useless for two causes, one, the general deterioration which is unavoidable in any structure, and, second, the design becomes obsolete, and they are not able to keep up in speed, range of guns, or other qualities necessary to fight in line with the later ships.

The CHAIRMAN. Instead of becoming useless, they go into the second line?

Admiral STRAUSS. They put them into the second line and keep them for a reserve fleet, but eventually their usefulness for that must cease.

Mr. WITHERSPOON. Take the 12-inch guns which are the kind of guns with which most of the battleships are supplied, as I understand it, do they cease to shoot with as much accuracy as the ship grows older as they did at first?

Admiral STRAUSS. No, sir; not other than as explained on Monday; the bores wear out and they are relined.

Mr. WITHERSPOON. I understand that; that would occur in any kind of a ship and that does not depend on what sort of a ship the gun is on.

Admiral STRAUSS. The guns do not shoot less accurately, no matter how old they are, if they are relined and are kept up.

Mr. WITHERSPOON. That is self-evident. Will they shoot with less destructive force as the ship grows older?

Admiral STRAUSS. The only way I can answer that question is by referring to the fact that the earlier guns had less muzzle velocity, and therefore less range.

The CHAIRMAN. The question asked by Mr. Witherspoon was if the age of the ship deteriorates the usefulness of the gun, if a good gun on an old ship would not shoot as well as the same gun on a new ship?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Most of the ships are supplied with the same 12-inch guns?

Admiral STRAUSS. No, sir; We have guns of 35, 40, 45 and 50-caliber lengths. These guns have different sized chambers, fire different charges of powder. The older guns are short, small chambered, and have low muzzle velocity, and while they are perfectly good guns, their range is not sufficient to make us consider them modern weapons. Taking the *Iowa* as an example, with her 35-caliber, small-chambered 12-inch guns——

Mr. WITHERSPOON (interposing). Has the *Iowa* 12-inch guns? I thought she had 13-inch guns.

Admiral STRAUSS. Twelve-inch guns. That ship is becoming more or less useless through age, and her guns are of an antiquated design.

Mr. WITHERSPOON. How far will the guns of the *Iowa* shoot a shell?

Admiral STRAUSS. I will have to get that from the range table. I can give you the muzzle velocity which would show you the difference.

Mr. WITHERSPOON. You have what you call a thumb rule so you can approximate it?

Admiral STRAUSS. I do not think that is of much value. The muzzle velocity of the *Iowa's* guns is about 2,100 foot-seconds, and the muzzle velocity of a modern 12-inch gun is 2,900 foot-seconds. If the range is great the velocity obtained with the *Iowa's* guns is not sufficient to do much armor piercing.

Mr. WITHERSPOON. What kind of guns has the *Tallahassee*?

Admiral STRAUSS. She has 12-inch 40-caliber guns of large chamber.

Mr. WITHERSPOON. 12-inch 40-caliber guns?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. What kind has the *Iowa*?

Admiral STRAUSS. 12-inch 35-caliber, small chamber.

Mr. WITHERSPOON. What is the difference between the capacity of the guns on the *Tallahassee* and on the *Iowa*?

Admiral STRAUSS. The *Tallahassee* guns fire at 2,600 foot-seconds and the *Iowa's* at 2,100 foot-seconds.

Mr. WITHERSPOON. Is that much of a difference?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. What difference would it make in the destructive force of the shell?

Admiral STRAUSS. That would depend upon the range. If the two ships engaged were very close it would not matter.

Mr. WITHERSPOON. What do you mean by "very close"; how many miles?

Admiral STRAUSS. To give you a definite answer I will have to look that up.

Mr. WITHERSPOON. I just want an approximate idea so as to see what the difference really is?

Admiral STRAUSS. It is a great difference. I should say, being not at all exact about it, that at four miles the *Iowa's* guns would be useless, as far as armor-piercing power is concerned, and the *Tallahassee's* guns of some use.

Mr. WITHERSPOON. Admiral, you talk of the armor-piercing power of a gun; have any of them got that power?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Have the tests we have made shown it?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. The theory of this penetrating shell is that it will penetrate armor plate and burst after it gets into the enemy's ship?

Admiral STRAUSS. That is what we want; we want, above all things, to perforate the armor of the enemy.

Mr. WITHERSPOON. That is the theory on which this shell is constructed, is it not?

Admiral STRAUSS. It is.

Mr. WITHERSPOON. When we tested the power of the shells to penetrate the 10-inch armor last year, did it do it or not?

Admiral STRAUSS. It perforated the armor.

Mr. WITHERSPOON. What injury would it be to a battleship to strike it with one of the shells and let it penetrate it up nearly to the large part of the shell and the shell burst on the outside, what damage would it do?

Admiral STRAUSS. Some of the fragments would go through the hole made by the shell and damage the interior of the ship.

Mr. WITHERSPOON. Do you believe that after a few shells have struck the armor plate of a battleship and perforated it that then subsequent shells would be more likely to penetrate clean through, would that weaken it so as to make the penetration easier for subsequent shells?

Admiral STRAUSS. Not unless the new hit was in the immediate neighborhood of the old hit.

Mr. WITHERSPOON. But if it was in the neighborhood of it, would that, in your judgment, make it more likely to penetrate it entirely?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. You believe, then, that these shells as tested by us are shown to be effective, do you?

Admiral STRAUSS. They are effective. They would be more effective if they got through whole and burst on the other side, but they were effective in perforating the armor plate and sending some fragments through to injure the material and personnel behind armor.

Mr. WITHERSPOON. Admiral, in the report of that test was there any record made of how far the shells that did not strike the target went beyond it?

Admiral STRAUSS. Yes.

Mr. WITHERSPOON. You did not get any idea from the report as to how many of the shots fired at the target would have hit a battleship?

Admiral STRAUSS. I did not consider the report in that light at all. Our data on that point comes from target practice.

Mr. WITHERSPOON. Suppose that the *Tallahassee* was engaged in a battle with the greatest dreadnought in any foreign navy and the shells from the *Tallahassee* would hit it every time, and the shells

from the dreadnought did not hit the *Tallahassee*, how long would it take the *Tallahassee* to destroy it?

Admiral STRAUSS. I can not answer that question.

Mr. WITHERSPOON. The way it battered that target to pieces indicates that it would not take very long, would it, under that supposition?

Admiral STRAUSS. I think that the target was sufficiently hit that if a battleship were in its place it would have been put out of action.

Mr. WITHERSPOON. And in a very short while?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. By the *Tallahassee*?

Admiral STRAUSS. These hits by the *Tallahassee* were made at leisure, in smooth water, and at an exact range, the firing extending over several days.

Mr. BATHRICK. To follow Mr. Witherspoon's questions a little further as to the cause of the obsolescence of a ship, it certainly is not the obsolescence of the guns?

Admiral STRAUSS. No, sir; not that alone.

Mr. BATHRICK. Could not you put better guns on the *Tallahassee*, for instance, if those upon her fail to reach the mark?

Admiral STRAUSS. You can put somewhat better guns on her, but the whole turret, ammunition supply, and so many other things would have to be altered to meet the new conditions that, taking into consideration the age of the ship, lack of speed, and one fault and another, it would be poor policy to do that.

Mr. BATHRICK. Lack of speed only demonstrates inefficiency when the enemy with greater speed is trying to get away?

Admiral STRAUSS. No, sir; in many ways.

Mr. BATHRICK. My idea is this, that if there is a battle and our ship is slow, it can not overtake the enemy's ship which is faster, and if there is to be a battle and they come within range, our guns are effective?

Admiral STRAUSS. Not against the modern ship. Taking for example the *Iowa*, the other ship would stand off a sufficient distance to pierce the armor of the *Iowa*, and the *Iowa's* guns would be helpless against the armor of the enemy.

Mr. BATHRICK. Suppose that ships of the same class, dreadnaughts, were in battle, would there be no usefulness of other ships of less speed and range to assist?

Admiral STRAUSS. If there was any great difference in speed the slow ship would probably be a hindrance rather than a help.

Mr. ROBERTS. In other words, the ship with the greatest speed, longer range, and more powerful guns selects its own battle conditions, and when battle is on it selects its own range and by its speed and superior range of guns can keep far enough away from the slow ship with its short-range guns to be immune from its attack and at the same time batter the slow, obsolete ship to pieces?

Admiral STRAUSS. That is the idea.

Mr. BATHRICK. That would be the idea if there were only two ships in action?

Admiral STRAUSS. The aim, of course, is to get the fleet as homogenous as possible, and if the fast fleet were hampered by a very slow ship the fleet would have to abandon that ship to the enemy or slow down their own speed.

Mr. ROBERTS. In regard to the guns becoming obsolete, you said that we have 35, 40, 45, and 50 caliber 12-inch guns?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. I understood you to state that it would be inadvisable to attempt to place on the older ships, the slow ships, the longer-range and more powerful guns because it would involve great structural change in the old ships to enable them to withstand the strain of the firing of the big guns?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. And would necessitate larger turrets, larger ammunition hoists, and everything in proportion, which, of course, are integral parts of the construction of the ship, and that the ship has to be designed with regard to those weights and strains?

Admiral STRAUSS. Yes, sir; that is correct.

Mr. ROBERTS. As a practical question it is not advisable to attempt to put the modern guns on the old ships, leaving out the question of speed and those tactical questions?

Admiral STRAUSS. No, sir.

The CHAIRMAN. The next item is "Torpedoes and appliances," \$1,000,000, an increase of \$250,000 over last year. What are the ranges of the torpedoes?

Admiral STRAUSS. Six of the earliest submarines have torpedoes of only 800 yards range, and those torpedoes are not very useful. They are as useful as the submarines are, but the size of the torpedo and consequently its range can not be changed on those boats.

Mr. BRITTEN. How many of those boats are there?

Admiral STRAUSS. There are six of them.

Mr. BRITTEN. And how many torpedoes?

Admiral STRAUSS. There are 18 of those on board.

Mr. BRITTEN. None in the warehouse?

Admiral STRAUSS. Yes; 32.

Mr. BRITTEN. Their range is 800 yards?

Admiral STRAUSS. Yes, sir.

Mr. BRITTEN. What size are they?

Admiral STRAUSS. They are 18-inch, short torpedoes.

Mr. WITHERSPOON. In regard to these shells, we lose a great many shells every year in target practice, of course, do we not?

Admiral STRAUSS. We do not use armor-piercing shells for target practice.

Mr. WITHERSPOON. The shells we use are cheap shells which you manufacture for that purpose?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Are they included in this appropriation?

Admiral STRAUSS. No, sir; except under ordnance and ordnance stores.

Mr. WITHERSPOON. That does not affect the statement you have made about the shells?

Admiral STRAUSS. No, sir; it has nothing to do with it.

Mr. ROBERTS. As to the 800-yard torpedo, that was supposed to be the most effective torpedo at the time the submarines were built?

Admiral STRAUSS. It was the best at that time.

Mr. ROBERTS. How many years ago was that?

Admiral STRAUSS. About 15 years ago.

Mr. BRITTEN. How does the 18-inch torpedo differ from the Bliss 21-inch torpedo in construction?

Admiral STRAUSS. The essential difference is in the engine. The Bliss torpedo is run by a turbine engine and the 18-inch Whitehead torpedo is run by a reciprocating engine.

Mr. BRITTEN. Have we not some arrangement with the Bliss Co. whereby we can use their turbine engine in our construction of the 18-inch torpedoes?

Admiral STRAUSS. We have an arrangement by which we are permitted to manufacture on Bliss's designs a certain number of torpedoes for every order they get, and we also have a royalty arrangement with them. The next torpedoes we are manufacturing at the torpedo station are to be Bliss 18-inch torpedoes with turbine engines.

Mr. BRITTEN. Why not the 21-inch torpedoes if the 21-inch torpedoes are superior in range?

Admiral STRAUSS. We need the 18-inch torpedoes for destroyers and submarines already arranged for that caliber of torpedo, and it is too late to change them.

Mr. BRITTEN. Will the construction of the present destroyers permit the changing of the tubes now on board from 18-inch to 21-inch?

Admiral STRAUSS. Not very well. We can in the future, if we have the funds available, rearm those destroyers with the 21-inch torpedoes, and it would be advisable to take that up. In the meantime the changes in the vessels will be so considerable that we have not advanced the proposition.

Mr. BRITTEN. With the exception of the storage of the ammunition or the torpedo there would not be any structural change necessary, would there, such as would apply to the firing of a big gun suggested by Mr. Roberts?

Admiral STRAUSS. Not very much. The torpedo might have to have a new place on the deck and we might have to strengthen the deck in that neighborhood.

Mr. BRITTEN. There would not be any concussion or back-fire?

Admiral STRAUSS. Very little.

Mr. BROWNING. What does one of the 21-inch torpedoes cost?

Admiral STRAUSS. \$8,750.

Mr. BUCHANAN. What do the 18-inch torpedoes cost?

Admiral STRAUSS. The 18-inch torpedoes costs \$6,220 as made by the Bliss people and as made by us they cost about \$4,200.

Mr. ROBERTS. Including the royalty?

Admiral STRAUSS. Everything.

Mr. BRITTEN. In regard to this million-dollar appropriation, has the department decided in advance just how many and just which size torpedoes they are going to purchase or construct with this money?

Admiral STRAUSS. Yes, sir; we would purchase the Mark IX 21-inch torpedo, to rearm the battleships with a better torpedo than they have now.

Mr. BUCHANAN. Is the department equipped to manufacture its own torpedoes?

Admiral STRAUSS. We are manufacturing at the torpedo station now about 100 a year, and we hope to increase the plant so as to guarantee about 150 a year.

The CHAIRMAN. In that connection, Admiral, I want to call attention to the item "Naval torpedo station, Newport, R. I.," on page 58 of the bill, "1 assembly shop, \$100,000; 1 torpedo storehouse, \$85,000; 1 machine shop, \$75,000; in all, \$260,000." If those items are appropriated for will that enable you to have a capacity of 150?

Admiral STRAUSS. That is what we count on.

Mr. GERRY. What size do you manufacture at Newport. Only the 18-inch torpedoes?

Admiral STRAUSS. Only the 18-inch torpedoes.

Mr. GERRY. You do not intend to make any larger sized torpedoes if you secure this increased appropriation?

Admiral STRAUSS. We would eventually make the larger sized torpedoes there.

Mr. ROBERTS. What additional equipment would you require to make the 21-inch torpedoes—largely machinery?

Admiral STRAUSS. We will not need any additional machinery; we need additional space.

Mr. ROBERTS. If you manufacture the 21-inch torpedoes?

Admiral STRAUSS. I do not think we would require any additional machinery for the 21-inch torpedoes.

Mr. BRITTEN. With the \$260,000 which the chairman has just called attention to, is it intended to construct new buildings in which to go ahead with the 21-inch torpedoes?

Admiral STRAUSS. Not immediately with the 21-inch torpedoes. We have such a large demand for the 18-inch torpedoes that we will continue that work there, but eventually and perhaps in the near future we would go into the 21-inch torpedoes.

Mr. ROBERTS. Can you tell us how many 21-inch long-range torpedoes are under contract?

Admiral STRAUSS. Fifty-eight.

Mr. ROBERTS. How many vessels are or will be equipped to handle those long-range 21-inch torpedoes?

Admiral STRAUSS. The *Nevada*, *Oklahoma*, *Pennsylvania*, and *No. 39* will require those torpedoes.

Mr. ROBERTS. Any of the destroyers?

Admiral STRAUSS. The newest destroyers now building will take those torpedoes.

Mr. ROBERTS. Is it probable that all destroyers authorized hereafter will be equipped for the 21-inch torpedoes?

Admiral STRAUSS. All the battleships and destroyers in the future will have the 21-inch 21-foot torpedoes.

Mr. ROBERTS. We will have an ever-increasing demand for some time for the larger torpedoes?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. How many of those torpedoes can the Bliss Works turn out in a year?

Admiral STRAUSS. They have a capacity of about 250 a year, and it does not matter what the range or caliber of the torpedo is, the parts are very similar and the advantage in range is gained by increasing the air supply.

Mr. ROBERTS. The 58 under contract will be delivered within the year?

Admiral STRAUSS. I think so.

Mr. ROBERTS. How many ships now ready for them will be equipped?

Admiral STRAUSS. There are no ships now ready for those torpedoes.

Mr. ROBERTS. They will be in advance of the ships?

Admiral STRAUSS. Yes, sir.

Mr. BRITTEN. I understand that we have contracted for the entire supply, the entire output of the Bliss plant for a couple of years in advance?

Admiral STRAUSS. They have orders for 522 torpedoes and are ready for additional orders. The process of manufacturing torpedoes may extend over a considerable time; that is, from the beginning of manufacture until they are finally proved at the range. As near as I can learn they expect to turn out about 250 a year.

Mr. BRITTEN. If they have orders on their books from us for 550, that would mean practically two years ahead?

Admiral STRAUSS. If we gave them additional orders they would commence the manufacture at once of certain parts and the manufacture of the new torpedoes would proceed with the completion of the old ones.

Mr. BRITTEN. What probability is there of any of the foreign governments contracting with the Bliss Co. for a supply of torpedoes for delivery two or three or four years from now?

Admiral STRAUSS. I do not know.

Mr. BRITTEN. You never heard that matter discussed?

Admiral STRAUSS. No, sir.

Mr. GERRY. How do the Newport torpedoes compare with the torpedoes bought from the Bliss Co.?

Admiral STRAUSS. Very well, indeed. Quite recently we had a report from one of the torpedo destroyers that had torpedo practice off Key West, and that boat made an excellent score with Newport torpedoes.

Mr. BRITTEN. They are about 40 per cent cheaper?

Admiral STRAUSS. About 30 per cent.

Mr. ROBERTS. About how long does it take to construct one of the torpedoes by the Bliss people? I mean by that from the time they begin the work until the final acceptance test has been held?

Admiral STRAUSS. It varies so much that I can not give you an exact answer.

Mr. ROBERTS. Could you give us any comparison between the time in the Bliss works and the Newport station?

Admiral STRAUSS. We have been slower at the Newport works for the reason that we have been hampered with an immense amount of repair work, which has taken the mechanics off of the regular manufacture. This repair work has been a burden, due to the increased activities of the fleet at target practice.

Mr. ROBERTS. After the torpedo is completed can you get your acceptance test quicker at the torpedo station at Newport than with the Bliss people?

Admiral STRAUSS. I do not think it would be very much quicker. They are both dependent on the weather. Perhaps the torpedo station has some advantage, but geographically weather conditions should be about the same at both places.

Mr. ROBERTS. Those made at the torpedo station have to pass the same test exactly as those made at the Bliss works?

Admiral STRAUSS. Exactly.

Mr. ROBERTS. Can you give us, roughly, what time it takes to complete a torpedo? Is it six months or a year?

Admiral STRAUSS. More than that. I should say from the time of beginning the work, placing the order, until the time the torpedo has passed its range test would be about two years.

Mr. ROBERTS. In other words, they can not be rushed; you can not turn them out quickly?

Admiral STRAUSS. The manufacture of torpedoes is very exact work.

Mr. TALBOTT. But you are at work on a number of them at the same time?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. That means the fulfillment of the order?

Admiral STRAUSS. Yes, sir.

Mr. BRITTEN. I would like to ask the admiral a question along the line of this appropriation of \$260,000 for the naval torpedo station. I notice it provides \$100,000 for one assembly shop, \$85,000 for a torpedo storehouse, and \$75,000 for a machine shop. When our committee was on its trip of inspection last summer it was my impression, which I got from Capt. Williams up there, that it would take about \$400,000, principally in new buildings and very little new machinery, to double the capacity of that plant. Has the estimate from the station been reduced by the bureau here, or is the \$260,000 just what they asked?

Admiral STRAUSS. This scheme did not contemplate the doubling of the output. The plant was originally designed for 100 torpedoes per annum. We have not determined what the rate is yet, because, as I say, they have been hampered somewhat, but putting it at 90, this scheme, I am assured, will increase the output to 150, which will be two-thirds more capacity, and this sum of money, \$260,000, is named after careful consultation with Commander Williams.

The CHAIRMAN. And the increase of original manufacture will expedite and facilitate your repair facilities?

Admiral STRAUSS. Yes, sir. We do not expect to increase the repair work.

The CHAIRMAN. It would help you in that, keep it out of the way of your manufacturing?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Will not your repair work naturally increase with more torpedoes, because you will have more destroyers and craft using them?

Admiral STRAUSS. Yes, sir; it would increase somewhat, but we have improved very much in our ability to run torpedoes without injury or loss.

Mr. ROBERTS. In view of your statement that the manufacturing work was hampered by the repair work, I would like to ask whether or not it would be advisable to separate that establishment into two parts, one that would work wholly on the repair work and the other devoting its whole energy to manufacturing?

Admiral STRAUSS. I do not think it would be necessary. We frequently resort to the scheme of taking a part that belongs to some

other gun mount or torpedo to hurriedly put an injured torpedo or mount in repair.

The CHAIRMAN. An interchange of work?

Admiral STRAUSS. It is all interchangeable.

Mr. WITHERSPOON. You stated that the cost of these torpedoes as manufactured by the Navy now is \$4,200. Last year Admiral Twining told us that the cost had been reduced to \$3,400, with an additional \$100 for the expense of testing, making \$3,500. I do not not understand the discrepancy between your statement and his?

Admiral STRAUSS. There is a discrepancy of \$700. Our latest return made it \$4,200. The explanation made by the torpedo station is that some of the work on these torpedoes was estimated and they simply made a wrong estimate; that the actual cost was in excess of that estimated.

The CHAIRMAN. In other words, the statement last year was based not upon accomplished results but partly accomplished and expectations as to the other?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. How many long-range torpedoes does this appropriation provide for?

Admiral STRAUSS. This \$1,000,000 does not provide for any. Those torpedoes are to be provided for the ships out of their armor and armament; they come in with the building of the ship.

Mr. WITHERSPOON. That is not affected by this million dollars?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. What kind of torpedoes are to be paid for out of this appropriation?

Admiral STRAUSS. This money is to buy the best 21-inch torpedoes that can be used in the tubes of previous battleships. Unfortunately, the long-range torpedo was developed after those ships were laid down and the tubes are too short to take the 21-foot torpedoes, but we want to give them the best torpedoes we can.

Mr. WITHERSPOON. The guns on the battleships now are effective at 7 or 8 miles distance?

Admiral STRAUSS. I think 7 or 8 miles is a long battle range.

Mr. WITHERSPOON. What is the reason?

The CHAIRMAN. That is 6 sea miles.

Mr. WITHERSPOON. So far away that you can just see it?

Admiral STRAUSS. That is the very point, the question of seeing the target. The errors in range increase with the range and the errors in shooting increase with the range, due to the fact that the danger space decreases, and that makes it inadvisable to conduct an engagement at any such distance.

Mr. WITHERSPOON. Seven miles?

Admiral STRAUSS. Seven or eight miles, 14,000 or 16,000 yards.

Mr. WITHERSPOON. In a battle could not both sides make the torpedoes, except the 21-inch torpedo, 21 feet long, make them all useless by fighting at a distance beyond their range?

Admiral STRAUSS. If they were afraid to get within range, of course the torpedoes would be of little use.

Mr. WITHERSPOON. They would be afraid. Would it not be sensible to keep the ships so far away from the enemy's ship that the torpedoes could not destroy them?

Admiral STRAUSS. I think the general desire would be to decrease the range below 14,000 yards.

Mr. ROBERTS. Has not the increased range of the torpedo increased the battle range?

Admiral STRAUSS. They have reacted on each other.

Mr. ROBERTS. Theoretically?

Admiral STRAUSS. They react on each other.

Mr. ROBERTS. Is it not assumed now that 10,000 yards, or 5 miles, will be the minimum battle range of the future?

Admiral STRAUSS. They do, but I do not fancy that a bold commander of a fleet would hesitate to close in to less than that if he thought he saw any advantage in it; he would take his chance.

Mr. ROBERTS. He would have in mind his torpedoes?

Admiral STRAUSS. The torpedo is not yet of as much importance as the gun. We have to have them because they may be of great importance, but the battle must depend primarily on the guns.

Mr. WITHERSPOON. If one of these 21-inch 21-foot torpedoes that the *Pennsylvania* and *No. 59* are going to carry were to strike the largest dreadnought would it destroy it?

Admiral STRAUSS. I do not think it would necessarily destroy the ship.

Mr. WITHERSPOON. Would it so disable it as to put it out of action?

Admiral STRAUSS. It might actually destroy it and it might disable it so as to put it out of action, but I do not believe it is admitted that one torpedo is necessarily fatal to a ship.

Mr. WITHERSPOON. Has that ever been tested by the Navy; has the Navy ever tried one on a ship to see what it would do?

Admiral STRAUSS. Yes, sir; we have.

Mr. WITHERSPOON. What did it do?

Admiral STRAUSS. We tried it on the *Tallahassee*. We actually fired a torpedo at her. We had in view then the question of underwater armor, and we found definitely what damage was done by the explosion of the torpedo, and while it was large, it seemed to be the consensus of opinion that it would not have been fatal to a large ship. Of course, the subdivision of a large ship gives it an advantage. This damage did not sink the *Tallahassee*.

Mr. WITHERSPOON. Do you remember what sized torpedo was used in that test?

Admiral STRAUSS. They used an 18-inch torpedo.

Mr. WITHERSPOON. That is the largest we have?

Admiral STRAUSS. That is the largest we have on submarines and destroyers up to the later destroyers and on some of the battleships and most of the armored cruisers.

(Thereupon the committee adjourned to meet to-morrow, Thursday, January 22, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Thursday, January 22, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL JOSEPH STRAUSS, CHIEF
 BUREAU OF ORDNANCE—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Strauss. When we adjourned yesterday I believe we were on the subject of torpedoes. Admiral, yesterday we were discussing the question of torpedoes and the torpedo station at Narragansett Bay, and I want to ask you what is the status relative to the authorization that was made a year or so ago for the purchase of land and the establishment of a torpedo repair station on the Pacific coast?

Admiral STRAUSS. We have just been informed that the transfer of the land is awaiting the sanction of the Attorney General as to the validity of the title before it is actually turned over to us.

Mr. BROWNING. Is that to be just a repair station?

Admiral STRAUSS. We are to make minor repairs at that station. The principal use of it will be as a storage place for torpedoes for the west coast and a range to put torpedoes in order for transfer to the ships.

Mr. BROWNING. It is not the purpose to build any?

Admiral STRAUSS. No, sir; only to make minor repairs.

The CHAIRMAN. At what price is the land to be purchased, do you know, Admiral?

Admiral STRAUSS. The amount of the awards was \$60,851.39. The question of interest on these awards from June 6, 1913, has not yet been finally determined, but if allowed must be added to these figures.

Mr. BROWNING. Admiral, I would like to get your views as to whether it would be better to increase the manufacturing plant at Newport, or whether a manufacturing plant should not be established on the Pacific coast?

Admiral STRAUSS. I do not think it would be well to divide our forces in that respect.

Mr. BROWNING. You do not think it would be?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. A torpedo is easily transported by rail?

Admiral STRAUSS. Yes, sir; there is no trouble about that, and the organization of a plant is a matter of such difficulty in length of time and the getting together of the skilled labor that I believe it better to concentrate at one place.

The CHAIRMAN. The question of freight in shipment would not counterbalance the other advantages of concentrated manufacture?

Admiral STRAUSS. No, sir; and that need not be considered, because the canal is nearly finished now and we will send ships from the east to the west coast, and they can very easily transport any torpedoes made on one side to the other without freight cost.

Mr. BROWNING. It would be very essential to have a repair plant at least on the Pacific coast? The sending of all the torpedoes for repair from the Pacific coast to Newport and then back again, I should think, would be expensive?

Admiral STRAUSS. We contemplate in this new plant making repairs of lesser magnitude. If the repairs are very extensive, we intend to send the replacement parts from the east coast, provided the store there did not have them.

Mr. STEPHENS. Do I understand that the purchase of the site has been authorized, Mr. Chairman?

The CHAIRMAN. It has not only been authorized but the terms have been agreed upon.

Mr. STEPHENS. And the appropriation made?

The CHAIRMAN. Yes, sir.

Mr. STEPHENS. Has appropriation been made for anything more than the site?

Admiral STRAUSS. Yes, sir. There will be sufficient money left over from the appropriation after purchasing the land to build a machine shop of small capacity, but quite sufficient for our immediate needs.

Mr. WITHERSPOON. What site are you speaking of?

The CHAIRMAN. We are talking about the repair torpedo station at Bremerton, on the Pacific coast.

Mr. HENSLEY. Is there any question as to the danger of transporting torpedoes by rail?

Admiral STRAUSS. None at all. They are sent without the war heads.

Mr. BRITTEN. It occurred to me that we might apply the \$400,000 that we practically saved on yesterday toward the construction or purchase of new torpedoes. I would like to ask the Admiral if he does not think \$400,000 could be used to very good advantage in the purchase of torpedoes?

Admiral STRAUSS. I think it could; but we are asking for \$1,000,000 for the Mark IX.

The CHAIRMAN. We are giving \$250,000 increase there, and then we appropriate all that is needed under "Armor and armament" for the new ships.

Mr. BRITTEN. That includes the supply of torpedoes?

Admiral STRAUSS. It includes the supply of torpedoes for the ship and for its reserve to be kept on shore for it. That is well taken care of in that appropriation.

Mr. ROBERTS. For the information of myself and, perhaps, other members of the committee, please tell us exactly what is included in the outfit of a ship under the appropriation "Armor and armament," all of the items.

Admiral STRAUSS. All of the armor, guns, gun carriages, ordnance equipment, tools and appliances for the management of the guns and gun carriages, turret ammunition hoists, torpedoes, and mines, and torpedo tubes, fire-control outfit, and explosives for mines and torpedoes.

Mr. ROBERTS. Does it not include a supply of ammunition?

Admiral STRAUSS. That is taken care of under "Ammunition for ships."

Mr. ROBERTS. "Ammunition for ships" includes shells as well?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Is there any danger when you have such a supply of torpedoes for the ships, if we should not have a war in 25 years, that those torpedoes would deteriorate in any way?

Admiral STRAUSS. No, sir; they do not deteriorate, but in 25 years they may be superseded by torpedoes of superior design.

Mr. WITHERSPOON. Then they would be useless?

Admiral STRAUSS. Yes, sir; they might become useless in 25 years.

Mr. BRITTEN. In our target practice or range practice with torpedoes, firing the torpedoes a number of times, does the mechanism show any material signs of wear?

Admiral STRAUSS. Not at all.

Mr. BRITTEN. So that a torpedo that costs from \$4,000 to \$8,000 could be fired every month 100, 200, 300, or 400 times and still be as good as the day purchased, provided it had not hit any target that was a very hard substance?

Admiral STRAUSS. Well, we do not fire our torpedoes every month. We have regular practices arranged two or three times a year, and during the entire existence of a torpedo it probably would not be fired as many as a hundred times. We have, however, fired torpedoes a hundred times without any apparent injury.

Mr. BRITTEN. As long as there is no apparent injury and every time a torpedo is fired or sent on its way the gunner gets experience, why not fire them oftener? What is the objection, if any?

Admiral STRAUSS. There seems to be an inevitable percentage of loss in firing torpedoes. We fire them in the open sea and try to have the conditions as severe as possible and sometimes the torpedo fails and is not picked up. We are reducing that percentage a great deal, but still it has to be considered in reference to the whole question.

Mr. BRITTEN. Our committee or a portion of our committee saw a torpedo fired at Newport under very unfavorable conditions; it was almost a blinding rainstorm, a cloudy day, and the bay was very heavy, and while we had some little trouble the commander of the ship, I suppose, did not feel that it was much trouble following the torpedo, and finally they picked it up all right under very adverse conditions.

The CHAIRMAN. The next item is "Mines and mining appliances: For naval-defense mines, appliances, and accessories, \$300,000." You have an appropriation available for mines and mining appliances under "Armor and armament," have you not?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. And you have been securing them under that appropriation heretofore?

Admiral STRAUSS. Yes, sir; but I am very anxious to have this amount included. This is not for mines for battleships and destroyers, but mines for regular mine-laying ships or ships that we arrange for that purpose. Now, we have the *San Francisco* as a mine layer, and we are going to use the *Baltimore* for that purpose, and it is contemplated to arrange the three scout cruisers so they can lay mines, not to destroy their usefulness as scout cruisers, but to make this an auxiliary duty, and we need the mines for those vessels.

Mr. HENSLEY. To what uses do you put the mines generally?

Admiral STRAUSS. The mines are used in two ways, one called defensive mining and the other offensive mining. This offensive mining came into considerable prominence in the Russo-Japanese War. The defensive mining of our harbors is done by the Army, the permanent mine defenses are planted by them. In case the Navy

had to anchor in some out-of-the-way place as a temporary base, they would have to mine the approaches to that place to give them any security at their anchorage. That would be defensive mining. Offensive mining would take place during a probable encounter with the enemy when it might be possible to plant mines in the path of the ships that were advancing to the attack.

Mr. BRITTEN. In other words, if our vessels were being attacked and you were trying to get under cover, you might drop a few of the mines in the pathway of the ships chasing us?

Admiral STRAUSS. Yes; and while we were maneuvering for position, for instance, we might employ these mines.

Mr. ROBERTS. Were not the mines used in the last fight in the Russo-Japanese War; when they endeavored to escape, did they not drop over mines?

Admiral STRAUSS. Yes; both the Japanese and the Russians lost ships by offensive mining.

Mr. ROBERTS. That brings up a question which was mooted at The Hague, whether or not such use of the mines should not be prohibited by international agreement?

Admiral STRAUSS. They have modified the use of them in this way, that if the mine breaks loose from its moorings it must become inoperative, so if these mines are floating at large and an innocent ship strikes them, no harm will be done; the mines we are getting fulfill that condition.

Mr. ROBERTS. It was reported that after a number of months and in one case perhaps a year after the last fight in the Japanese-Russian War that merchant vessels had been injured by striking the mines which were floating about. I do not know whether they were afloat or at anchor.

Admiral STRAUSS. That is true.

Mr. ROBERTS. There is that danger with the mine at anchor. That would be a live mine?

Admiral STRAUSS. A live mine; yes, sir.

Mr. ROBERTS. If it were not picked up by one force or the other after the fight, it would still be a menace to navigation indefinitely?

Admiral STRAUSS. It would. We would have to clear the waters of our own mines, and, of course, we would have to know the location.

Mr. ROBERTS. The fact is that all nations are using them and we must have them as well?

Admiral STRAUSS. Yes; they are all using them. Besides these mines for which this money is asked we have devised a floating mine that is a very cheap affair, costing about \$75, and we are making 100 of them for a trial. These mines have to fulfill the conditions laid down by The Hague, that they must not operate after they have been laid one hour.

Mr. BRITTEN. By "operate" do you mean explode?

Admiral STRAUSS. They must become innocuous within an hour from the time they are dropped.

The CHAIRMAN. In the report of the bureau for the past fiscal year this language occurs:

Floating mines of the type developed can be manufactured so quickly when desired that the bureau does not propose to accumulate them in large quantities. Plans have been prepared, however, for securing them in quantity and on short notice when necessary.

Admiral STRAUSS. Yes, sir; that is the floating mine.

Mr. ROBERTS. That is not the only type we have?

Admiral STRAUSS. No, sir; the principal mine is the anchored mine.

Mr. WILLIAMS. Can these floating mines which are inoperative after an hour be recovered and recharged for subsequent use?

Admiral STRAUSS. No, sir. The way they are made harmless is by having the buoyancy chamber in the mine take in enough water in an hour to sink it, and the loss of these mines would, of course, be an incident of war operations.

The CHAIRMAN. They are comparatively cheap?

Admiral STRAUSS. They cost \$65 to \$75 apiece.

Mr. WILLIAMS. Would not they be worth recovering?

Admiral STRAUSS. Yes, sir; they would be worth recovering, but this condition, of course, makes it impossible to do so.

Mr. WITHERSPOON. You spoke of two uses of these mines, one offensive and one defensive, for the fleet. Can they be used to protect a harbor?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Could they be used, for instance, to prevent a hostile fleet from coming into New York?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Would that be absolutely safe protection to the port of New York?

Admiral STRAUSS. Not at all, sir.

Mr. WITHERSPOON. Why?

Admiral STRAUSS. Because the ships could lie off New York any distance, several miles on account of the long range of their guns, and control the place.

Mr. WITHERSPOON. Then, I understand you to mean that you could not arrange the mines far enough out into the sea to prevent a hostile fleet from getting within gun range of the city. Is that what you mean?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. You could fix it so they could not come into the city, and all they could do would be to stand out and shell it.

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. If I remember correctly, during the Spanish War the Delaware River was mined?

Admiral STRAUSS. Yes; the Army mined all of the channels during the Spanish War.

Mr. BROWNING. That was pretty good protection to Philadelphia. They could not have gotten up there very well?

Admiral STRAUSS. No.

Mr. WITHERSPOON. Those mines could be used to make it impossible for a hostile fleet to reach Philadelphia, Washington, Baltimore, and New Orleans?

Admiral STRAUSS. Yes, with the reservation that a hostile fleet knowing that the channel is mined would attempt to remove the mines just the same as we would. They can sweep for the mines or countermine and destroy the obstructions in that way.

Mr. WITHERSPOON. Are the mines visible to the eye?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. How could they find out where you put them?

Admiral STRAUSS. They drag for them. They have two tugs or powerful boats with a drag between them, and they sweep until they catch the mine and then remove it.

Mr. WITHERSPOON. Suppose you had mines across the Delaware River, half way between the ocean and Philadelphia, it would take a long time to drag that river and find out where they were, would it not?

Admiral STRAUSS. It would take quite a while to get rid of the mines, but, of course, only the channel is dragged.

Mr. STEPHENS. Is there no danger of the explosion of the mine by dragging?

Admiral STRAUSS. There is some danger, but it is a risk they would have to take.

Mr. ROBERTS. Is there anything in the stories I have seen in the papers and rumors I have heard of a method of exploding these mines by the use of Hertzian rays.

Admiral STRAUSS. There was a newspaper story to that effect going the rounds a few months ago, about a man over in France claiming that he had a means of exploding the mines by these rays, but the last I read of it they had arrested him as a swindler.

Mr. WILLIAMS. Can these anchored mines be recovered and used again?

Admiral STRAUSS. Yes, sir; they do recover them.

Mr. WILLIAMS. The mere fact, then, that they are set and remain for some time in the water does not prevent their being recovered and used?

Admiral STRAUSS. No, sir.

Mr. ESTOPINAL. They are not any more dangerous than the old-style torpedo used in the Civil War?

Admiral STRAUSS. Not at all. The harbor at Guantanamo was mined by the Spaniards a long time before the Spanish War, and we recovered those mines when we occupied the harbor. We recovered them without much difficulty by dragging.

Mr. ROBERTS. Are the mines you are speaking of contact mines or can they be exploded by electricity?

Admiral STRAUSS. The mines referred to here are contact mines. The Army uses both kinds; that is, contact and control mines.

Mr. ROBERTS. Is the same mine used by the Army and can the same mine be exploded either way, or have they separate mines for contact and separate mines for control?

Admiral STRAUSS. They are arranged to explode either way.

The CHAIRMAN. Speaking of the appropriations available, you said that under "Armor and armament" you could purchase mines. I will ask you if also the appropriation for "Ordnance and ordnance stores" does not make some money available for mines?

Admiral STRAUSS. Yes, sir. If we have any balance under that appropriation "Ordnance and ordnance stores" it could be used for the purchase of mines.

Mr. GERRY. Are we making any of these mines?

Admiral STRAUSS. We are buying 1,100 mines and that gives us the privilege of making 100 more of the same design and we are going to make that number.

Mr. ROBERTS. Where will they be made?

Admiral STRAUSS. We have not determined yet. The whole matter is so simple that we could manufacture them at any navy yard.

Mr. ROBERTS. Any boiler shop would answer the purpose?

Admiral STRAUSS. Something like that.

Mr. WITHERSPOON. How much are you paying for the 1,100 mines?

Admiral STRAUSS. \$490 apiece.

Mr. WITHERSPOON. I thought you said a moment ago that the mines could be made for \$75?

Admiral STRAUSS. That was the floating mine.

The CHAIRMAN. The admiral is talking about the anchored mine now.

Mr. WITHERSPOON. The main cost, then, is the anchor?

Admiral STRAUSS. The anchor is a considerable part of the cost, but the mine itself contains mechanism to make it operate properly that is not required in the floating mine.

Mr. STEPHENS. What is the estimated cost when manufactured by the department?

Admiral STRAUSS. I think we will make them for about \$400.

Mr. WILLIAMS. Is it the purpose or custom of the Government to recover and reuse the mines, or are they usually abandoned?

Admiral STRAUSS. We recover them.

Mr. WILLIAMS. They make that a rule?

Admiral STRAUSS. Yes, sir; they recover them right along. We have one ship, a mine ship, the *San Francisco*, that is engaged in practice mining in different places, and all her mines are recovered after being laid. Then our battleships have all had practice at the same thing, and the mines are invariable recovered.

Mr. WILLIAMS. What percentage of loss is there from time to time?

Admiral STRAUSS. They get them all.

Mr. WILLIAMS. Then why multiply the number if we are recovering and reusing them?

Admiral STRAUSS. It takes a great many mines to plant a proper mining field; that is, they must be close enough together so that ships passing over that ground will be reasonably sure of striking one of them, and you can see from that that a great number would be required to cover any reasonable amount of space.

Mr. ESTOPINAL. They are planted across the channel and in rows?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Why is it that the Navy Department has not supplied the Navy with a sufficient quantity; have they just lately found out that they are useful?

Admiral STRAUSS. This is the third year we have asked for money for mines.

Mr. WITHERSPOON. I understand. That is the very point, why you have not asked before, during all the years that we have been building up the Navy?

Admiral STRAUSS. We have asked.

Mr. WITHERSPOON. And Congress would not give them to you?

The CHAIRMAN. We have given them a part, but not all.

Admiral STRAUSS. We have had money available for the mines for the regular building program. That comes out of "Armor and armament." Under this special appropriation we asked for \$100,000 beginning with 1912, and asked it again in 1913, and this is the third time. We did get an appropriation in 1907 for mines. We have had

a great deal of trouble in getting what we considered a satisfactory mine. However, we did the best we could and supplied ourselves with some. This new mine we have has been thoroughly tested and found very satisfactory, and we now feel that we ought to have a proper supply.

Mr. WITHERSPOON. Have you ever tried one of them to see whether or not it would destroy a ship?

Admiral STRAUSS. No, sir; but we feel certain that the charge would destroy a ship, at least it would injure the ship pretty badly.

Mr. WILLIAMS. Was it ever determined with any certainty the character of mine that destroyed the *Maine*?

Admiral STRAUSS. No, sir.

Mr. ESTOPINAL. Was the fact established that the explosion was exterior?

Admiral STRAUSS. I think beyond all reasonable doubt; yes, sir.

Mr. WILLIAMS. It was a mine of modern use, I presume?

Admiral STRAUSS. The only thing we could determine was that the initial explosion occurred exterior to the ship.

Mr. ROBERTS. That might have been done by a very high explosive in a thin copper water-tight compartment actuated by electricity, so there would be no evidence left after the explosion as to what caused the explosion?

Admiral STRAUSS. Whatever mine was used, of course, would have been destroyed by the explosion.

Mr. ROBERTS. In your judgment, would one of our type of anchor mines—the last mine you were speaking of—if exploded under similar conditions utterly destroy itself so that there would be nothing left to show?

Admiral STRAUSS. I think it would. We were given an appropriation in 1907 and one in 1910—\$100,000 each time.

The CHAIRMAN. In each bill there is money available under "Armor and armament" and "Ordnance and ordnance stores."

Mr. ESTOPINAL. Is there not a large amount appropriated in the Army bill for the defense of harbors by mines?

Admiral STRAUSS. They are very actively engaged in mining.

The CHAIRMAN. You are just now giving a contract for the 1,100?

Admiral STRAUSS. Yes.

The CHAIRMAN. The next item is "Torpedo station, Newport, R. I.: For labor and material, etc., \$80,000," the same as last year. Did you use all of that last year? Did you have any unexpended balance?

Admiral STRAUSS. No, sir.

The CHAIRMAN. Will you need the \$80,000 this year?

Admiral STRAUSS. I think we will need that amount.

Mr. BRITTEN. Mr. Chairman, in the appropriation under a different head we attempt to arrange for a machine shop, \$75,000. Will that \$75,000 include the new machinery?

Admiral STRAUSS. That will not include machinery. We have sufficient machinery. What we need is shop space.

Mr. BRITTEN. You will not require any additional machinery?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. You will require additional men when you get the new buildings?

Admiral STRAUSS. We will need some more men.

Mr. ROBERTS. When those buildings are ready for use this item will have to be increased somewhat, but that will not come for a year at least?

Admiral STRAUSS. No, sir.

The CHAIRMAN. The next item is "For new and improved machinery and tools for torpedo factory, \$15,000," which is the same as last year. That is for the purpose of keeping up the machinery?

Admiral STRAUSS. Yes, sir; for replacements, etc.

The CHAIRMAN. The next item is "Experiments, Bureau of Ordnance, \$150,000." The appropriation was \$200,000 last year, and was increased the year before. Will the \$150,000 be sufficient to meet your demand for the coming year?

Admiral STRAUSS. That will be sufficient.

Mr. WILLIAMS. Have the various nations information as to the character of explosives used by others?

Admiral STRAUSS. I think they have. It seems impossible to keep those things secret for any length of time.

Mr. WITHERSPOON. How does this nitrogelatin explosive compare in power with the explosive that you put into a torpedo; is it more or less powerful?

Admiral STRAUSS. It is very difficult to determine exactly the relative strength of explosives, but the best test we can make is to fire them in a container under water and have pressure gauges near them, and then measure the effect on the pressure disks due to the explosion.

Mr. WITHERSPOON. Which do you use in the torpedo?

Admiral STRAUSS. We use guncotton in the torpedoes. In the mines we use trinitrotoluol.

Mr. WITHERSPOON. What would you say, roughly, about the comparative destructive power of a shell with half as much nitrogelatin as the guncotton in a torpedo; which would be the most destructive?

Admiral STRAUSS. Undoubtedly the torpedo would be the more destructive.

Mr. WITHERSPOON. Admiral, suppose that one of our 12-inch shells should strike an enemy's ship and not penetrate it; what effect would the jar on the ship have upon the men inside?

Admiral STRAUSS. Very little effect.

Mr. WITHERSPOON. You do not think that it would do any damage?

Admiral STRAUSS. It would not be a very serious thing if it did not penetrate.

Mr. ROBERTS. If one of the 12-inch shells should strike a turret it might throw it out of training?

Admiral STRAUSS. Yes, sir; it might jam the turret.

Mr. ROBERTS. If you recall the test with the old *San Marcos*, one shell hit the turret and interrupted the training?

Admiral STRAUSS. Yes, sir.

Mr. TALBOTT. It was a mooted question for a long time whether or not we could build a vessel to resist a shot?

Admiral STRAUSS. Ships can not carry armor enough to keep out all shell at the minimum range.

Mr. TALBOTT. The shooting power of the guns is ahead of the armor plate?

Admiral STRAUSS. It all depends on the distance the gun is from the armor plate.

The CHAIRMAN. To put the matter in concrete form: In other words, the Government is putting up to you the problem of getting impenetrable armor and at the same time to manufacture a gun that will penetrate any armor?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Is it definitely known what the Japanese used as the explosive in their shells in the Russo-Japanese War?

Admiral STRAUSS. They had an explosive which was talked about a great deal, and you probably remember reading of it in the papers; Shimose powder, they called it. It has been pretty well settled that that was picric acid, which under another name, lyddite, has been used for many years in England, and under the name of melinite for many years in France.

Mr. ROBERTS. How does it compare in its destructive power with our explosive D?

Admiral STRAUSS. It is a very strong explosive, but by no means as safe as explosive D.

Mr. ROBERTS. It is a strong explosive, but not as safe to handle?

Admiral STRAUSS. You know the Japanese wrecked one turret by firing their high explosives.

Mr. STEPHENS. Is it stronger than D?

Admiral STRAUSS. It is stronger.

Mr. TALBOTT. Had they any other vessels in the battles with the Russian fleet than those we know of; had they submarines in those fights with the Russian fleet?

Admiral STRAUSS. I do not think they did.

Mr. TALBOTT. A good many people think they did.

Mr. ROBERTS. I think it is generally understood that the submarines that the Japanese bought did not arrive in time to be used in the battle?

Admiral STRAUSS. It is my impression that the submarines took no part in that war.

Mr. TALBOTT. A good many people think they did.

Mr. BRITTEN. Is it not the general impression that the torpedo played the most important part in giving the Japanese the control of the sea through the destruction of one-half of the enemy's ships before the other half could reach there?

Admiral STRAUSS. There were several ships sunk, but I do not think it has been definitely determined whether it was done by torpedo fire or by the mines which were used.

Mr. BRITTEN. Were not the ships stationary at the time?

Admiral STRAUSS. No, sir; they were under way.

Mr. ROBERTS. Which battle are you speaking of, the first attack outside of Port Arthur?

Admiral STRAUSS. Yes, sir.

Mr. BRITTEN. I am talking about the first attack.

Admiral STRAUSS. That is not what I mean.

Mr. HENSLEY. The chairman asked you a question with reference to your position as to trying to secure the very best armor plate and at the same time shells which would penetrate. Is your relation to this Government in that regard any different from the relation of men holding similar positions to the other governments? They are all engaged in the same duty, are they not, of trying to develop the very best armor plate?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. And at the same time trying to develop shells and high-power machines that will penetrate it?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. We are all in the same business.

Mr. HENSLEY. Each government knowing just what the other governments are doing and to what extent they are successful?

Admiral STRAUSS. Yes, sir. I think we have a pretty good line on what other governments are doing, and I am sure they have a pretty good one on what we are doing.

The CHAIRMAN. The next item is "Arming and equipping Naval Militia," \$125,000, which is the customary appropriation?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Did you use all of that appropriation last year?

Admiral STRAUSS. We used it all last year, and from the expenditures already made it is probable that the whole amount will be needed for the current year. On the 1st of January we had expended \$66,000, and had \$59,000 left.

The CHAIRMAN. The next item is "Repairs, Bureau of Ordnance." That is for general repairs to buildings, magazines, etc., \$30,000, the same as last year?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Will that amount be needed?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. "Contingent, Bureau of Ordnance," is the same as the current appropriation, \$9,500?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. The next item is on page 51 of the bill, "Navy Yard, Washington, District of Columbia: For extension of gun factory, \$450,000." What plans and detailed specifications have you for that?

Admiral STRAUSS. I have rough plans here—they are rough plans and approximate estimates—and after they were completed a scheme was presented to the Secretary quite different from this, but looking to the extension of the yard and its facilities. The new scheme involved the purchase of land outside the limits of the navy yard.

The CHAIRMAN. So that you are now considering a scheme to change and modify the first one submitted, and you have not yet reached a definite conclusion as to what you expect to do?

Admiral STRAUSS. The scheme which I have here in some detail is definite, but there are points about the new proposed scheme which are advantageous. It involves the purchase of land outside the yard estimated to cost \$193,000, and would probably cost more than that.

The CHAIRMAN. What I want to get at is this: The department is now considering substituting the last plan for the first one that is recommended in this bill?

Admiral STRAUSS. They are considering it, but we thought we would put it up to the committee whether they wished, if they intend to increase the facilities at the navy yard, to go into this question of additional land, which always is objectionable.

Mr. ROBERTS. You are working back to the old plan put up to the committee 8 or 10 years ago, are you not?

Admiral STRAUSS. I am not familiar with that plan.

Mr. ROBERTS. We had a plan put up to the committee for increasing the facilities at the gun factory, calling for an expenditure of four or five million dollars, and it included the purchase of additional land.

Admiral STRAUSS. This plan does not contemplate the purchase of additional land and involves a final expenditure of about \$2,250,000. The one that does contemplate the purchase of land has not been worked out, but it will probably cost considerably more than this estimate.

The CHAIRMAN. The plan which is suggested here is a part of the \$2,250,000 plan. If I understand, the board on shore stations have reported against the feasibility and the practicability of extending the shops in the yard as it is now?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Since that original plan which I mentioned was submitted to the committee, we have, of course, put in the yard quite a number of buildings that were contemplated under that plan, I think, which would necessarily bring down the cost of the original plan considerably?

Admiral STRAUSS. I presume that many of the deficiencies of that date have been made up.

Mr. ROBERTS. Suppose that either of the plans mentioned is carried out, what would be the effect then on the output of the gun factory; will we be able to turn out all of the guns that we need?

Admiral STRAUSS. All the guns and gun-carriages and equipment for a building program as large as the one presented by the Secretary this year.

Mr. ROBERTS. What proportion of the guns that we will need under a program similar to that of this year are we able to turn out with the present facilities of the yard?

Admiral STRAUSS. About two-thirds.

Mr. TALBOTT. What is the difference between the Watervliet Arsenal and the Washington Navy Yard?

Admiral STRAUSS. About \$850 in favor of the Washington Navy Yard on the 14-inch gun.

Mr. ROBERTS. As I understand, in order to make the other third of the supply needed we must expend somewhere from \$2,000,000 to \$4,000,000 or \$5,000,000?

Admiral STRAUSS. \$2,238,500.

Mr. LEE. What are we doing at the New Orleans Navy Yard?

Admiral STRAUSS. We have a dock there, a floating dock. So far as I know, the activities at that place have been confined to docking merchant ships which are too large for the regular docking facilities of New Orleans.

Mr. LEE. What is the condition of the shops and the machinery?

Admiral STRAUSS. I do not know what their present condition is, it does not come under my bureau.

Mr. LEE. Do you not think that it would be advisable for the Navy Department, instead of building more buildings, to transfer some of this work to buildings that we now have? For instance, increasing the capacity of the gun factory at Washington, could we use the New Orleans Navy Yard for that particular purpose and expend the \$2,000,000 at New Orleans for machinery?

Admiral STRAUSS. No, sir. The organization, experience, superintending force, and all the knowledge that has been concentrated at the Washington gun factory is an asset there which makes it advisable to enlarge it rather than to divide the work.

Mr. ESTOPINAL. The New Orleans Navy Yard is not equipped for making guns?

Admiral STRAUSS. No, sir.

Mr. ESTOPINAL. It was not intended for that. A report has been recently made, and I presume the committee will be made acquainted with it, of the conditions at that station by Admiral Stanford, who was down there recently.

Mr. TALBOTT. Is there any location better adapted to the manufacture of guns, taking everything into consideration, cost of plant, land, and all, than Washington?

Admiral STRAUSS. If we were free to choose a place to build a gun factory to meet the probable needs of the Navy, we would probably not select Washington, at least not the location we have here now. We would select a place where we were free to have more land and a wider labor market, and then we would consider conditions, freight facilities, supplies, etc.

Mr. TALBOTT. The freight facilities here are as good as anywhere?

Mr. ROBERTS. The distance you must transport the guns and material?

Admiral STRAUSS. So far as freight facilities are concerned, yes, sir.

Mr. WITHERSPOON. How many 14-inch guns can the Washington Navy Yard now construct in a year?

Admiral STRAUSS. Twenty 14-inch guns.

Mr. WITHERSPOON. Every year?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Would that be the entire capacity of the factory or do you mean it could do that and do other things at the same time?

Admiral STRAUSS. And do all the other work besides that.

Mr. WITHERSPOON. Twenty guns a year?

Admiral STRAUSS. Twenty of the largest guns per annum.

Mr. WITHERSPOON. I believe you stated yesterday that the *New York* and *Texas* were about completed, did you not?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. And the guns on them, I believe?

Admiral STRAUSS. The guns are mounted.

Mr. WITHERSPOON. How many other 14-inch guns have you to construct?

Admiral STRAUSS. The guns for the *Oklahoma* and *Nevada* are being shipped right along.

Mr. WITHERSPOON. They are already made?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Have you any others made except for those ships?

Admiral STRAUSS. The guns for the *Pennsylvania* and No. 39 are in process of construction and will be finished well before they are needed.

Mr. WITHERSPOON. When will that be?

Admiral STRAUSS. We should begin shipping them in about a year.

Mr. WITHERSPOON. For all the ships authorized, the factory with its present capacity can construct the guns?

Admiral STRAUSS. We can construct 20 guns a year. Two ships require 30 guns, and we would have to have 10 of the guns built by other people.

Mr. WITHERSPOON. That is not what I am getting at. I believe you stated that we have six battleships that are not entirely completed. The *New York* and *Texas*, their guns are all made, and the *Nevada* and *Oklahoma*, their guns are made?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. And with the present capacity of the factory the guns for the *Pennsylvania* and No. 39 can be constructed within a year?

Admiral STRAUSS. We have some guns manufactured by the Army at Watervliet. Of the 30 guns required 20 are being built at the Washington Navy Yard and 10 at Watervliet.

Mr. WITHERSPOON. I thought we made all of the guns?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. We do not manufacture all of them?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. With the present arrangement, did you not state that the guns for the *Pennsylvania* and No. 39 would be completed in about a year?

Admiral STRAUSS. Those for the *Pennsylvania* will, and the others before they are needed.

Mr. WITHERSPOON. If this present program should be carried out and we should authorize two more battleships, how long would it be before those two battleships would be ready for their guns?

Admiral STRAUSS. About two years.

Mr. WITHERSPOON. Does it not take three years to construct a battleship?

Admiral STRAUSS. At a certain stage of the construction of the ships they get the guns and the other work goes on. Before the ship is actually completed it gets the guns.

Mr. WITHERSPOON. If the battleships were authorized at this session of Congress, they would need the guns in about two years?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Then the present capacity of the factory would only be—

Admiral STRAUSS (interposing). Two-thirds. We could make two-thirds of the guns for two ships.

Mr. WITHERSPOON. Supposing that the present program is not adopted by Congress and the two battleships are not authorized, will you need this extension, then, to construct all of the guns necessary?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. This extension, then, is based on the assumption that Congress is going to authorize two battleships?

Admiral STRAUSS. Yes; that we will have a regular building program of two battleships per annum.

Mr. WITHERSPOON. I am not talking about the program. I am talking about this particular occasion, this particular authorization of two battleships. If none were authorized at all, you would not need this extension?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. If one were authorized, you would not need this extension?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. This extension is based on the assumption that Congress is going to authorize both of these battleships?

Admiral STRAUSS. Not only these two battleships, but that they will construct the ships in the future on a similar program. When I say "needed," that is needed so that we can do all of our own gun building and gun-carriage building.

Mr. WITHERSPOON. I understand.

The CHAIRMAN. We purchase some guns from the Army arsenal at Watervliet and then you have some made by private concerns and some also manufactured here in Washington?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What is the comparative or relative cost of the same character of gun at the different places? Take a 14-inch gun, for instance—what does it cost you to manufacture it at Washington, at Watervliet, the Bethlehem Steel Works, and at Midvale?

Admiral STRAUSS. It costs us to manufacture a 14-inch gun at the Washington Navy Yard \$60,145. The last bids from the Bethlehem and Midvale steel companies for the same work were \$79,800 for the first-named company and \$79,200 for the second, but these bids were not accepted. The cost at the Watervliet Arsenal is \$61,000.

Mr. GERRY. What is the situation with regard to the labor market here?

Admiral STRAUSS. The labor market here is very largely built up to meet our own necessities. To a certain extent we depend upon Baltimore, the distance being small. This plant here takes the largest number of skilled men of any plant in the immediate neighborhood.

Mr. FARR. Is the cost at the Watervliet Arsenal as high as the Bethlehem Co.'s bid?

Admiral STRAUSS. No, sir; a little more than our cost.

The CHAIRMAN. Bethlehem and Midvale are more?

Admiral STRAUSS. Yes, sir; \$19,000 more.

Mr. BROWNING. How about Watervliet? Is there much of a labor market there?

Admiral STRAUSS. That whole country is a manufacturing district. I fancy they have a better labor market.

Mr. BROWNING. Yet you say that the guns cost more?

Admiral STRAUSS. Yes, sir; they cost a little more.

Mr. FARR. Did I understand you to say yesterday that the cost of manufacturing torpedoes by the Government was 30 per cent less than the amount charged the Government by private concerns?

Admiral STRAUSS. Just about 30 per cent.

Mr. FARR. How do you account for that discrepancy in the price?

Admiral STRAUSS. Private concerns have to make a profit on their product. This price that I give is without any addition for profit. Then, there are certain other charges which we do not have. We do not insure and we do not count interest on the capital, and then our supervisory force is cheaper than that of outside firms.

The CHAIRMAN. And no taxes?

Admiral STRAUSS. No taxes.

The CHAIRMAN. You do not include the repairs?

Admiral STRAUSS. We do; yes, sir.

The CHAIRMAN. Do you include in the cost of the gun the clerical and drafting force?

Admiral STRAUSS. Yes, sir; that includes all charges besides overhead and depreciation, including clerical, drafting, and officers' supervision.

The CHAIRMAN. What percentage of the cost would you estimate the clerical and drafting force that is paid out of the general appropriations and not out of this appropriation?

Admiral STRAUSS. One per cent to one and one-half per cent.

The CHAIRMAN. Do you include anything whatever for the Navy Department, the cost of the force in the Navy Department that contributes to the work as an overhead charge?

Admiral STRAUSS. We do not take account of that because that force is employed in arranging these things, preparing specifications, writing letters, etc., for private purchases as well as for the ones we manufacture ourselves.

The CHAIRMAN. Do you make any estimate of the salaries of the naval officers who are detailed to the yards and serve there in various capacities?

Admiral STRAUSS. Yes; they are included.

The CHAIRMAN. Those are a number of items which are not included in your cost, but when you purchase guns from the Watervliet Arsenal, from the Army, they make you pay something for those things?

Admiral STRAUSS. They make us pay what they call the War Department burden. They allot to the cost a certain proportion of the office expenses here in Washington.

The CHAIRMAN. They add that to the cost of the guns?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Please tell me how much it costs to shoot a 12-inch gun and a 14-inch gun when you use the shells and explosives which you would use in a battle?

Admiral STRAUSS. For a 14-inch gun it costs between \$477 and \$720.

Mr. WITHERSPOON. Is that as near as you can give it?

Admiral STRAUSS. That variation is due to the difference in the price of shell, powder, etc. I can give it to you for any one year or any one lot of powder.

Mr. WITHERSPOON. You say that you get the shells now under contract, do you?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Would that mean that at the present rate it would be \$450 a shot?

Admiral STRAUSS. About \$470. There are some little items which I have not included.

Mr. WITHERSPOON. How much does it cost for each shot in the case of target practice, where you use cheap shell and you have not the explosive in it?

Admiral STRAUSS. That would amount to about \$250.

Mr. WITHERSPOON. In round numbers, a little over half as much as it takes to shoot a shell in battle.

The CHAIRMAN. The next item is "Fireproof general storehouse." I believe that is to cost \$225,000, and you are asking for an appropriation of \$125,000?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What about that?

Admiral STRAUSS. I have some photographs which will explain the necessity for that storehouse, perhaps, better than I could in words. We have a tremendous amount of ordnance material lying about the yard not under cover, and while it does not deteriorate to any great degree, the cost of keeping it from deteriorating is considerable, and it interferes with the readiness of this material for use. Altogether it is a bad policy to continue this system of scattering valuable material of that sort around.

The CHAIRMAN. The next item is, "Naval proving ground, Indian Head, Md.: Addition to facilities, \$50,000." Last year we gave you \$29,000?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Please tell us about that, Admiral.

Admiral STRAUSS. We have submitted a recommendation for increased facilities at the powder factory which would be capable of doubling the output there. That involves an expenditure of \$500,000 the first year and about half that subsequently. If that is granted, then this item of \$50,000 can be omitted. In other words, they are alternate items.

The CHAIRMAN. The item "addition to facilities" is to make subordinate additions to your manufacturing facilities, but if this item of \$500,000 for the extension of powder factory is granted, you will not need the \$50,000?

Admiral STRAUSS. No, sir.

The CHAIRMAN. It is included in the \$500,000 item?

Admiral STRAUSS. On a larger scale, yes, sir. The \$50,000 item I have itemized here.

The CHAIRMAN. Please insert it in the hearing.

Admiral STRAUSS. Yes, sir.

(The statement referred to is as follows:)

Memorandum in regard to extension to facilities at Indian Head Proving Ground.

1 magazine.....	\$8,000
2 dry houses, capacity 125,000 pounds, \$4,500 each.....	9,000
Acid house.....	5,000
Mixing house.....	4,000
Pulping and poaching.....	6,000
Solvent recovery.....	9,000
Railroad extension.....	10,000
Total.....	51,000

Mixing house would be of concrete, wood block floor, with a front wall.

Pulping and poaching house to have roof raised and have a concrete floor, giving room for two more poachers.

Railroad extension is for an automatic trolley between houses on the powder line.

The CHAIRMAN. "Toward extension of powder factory, \$500,000." Can you itemize that also?

Admiral STRAUSS. Yes, sir; I have that here.

(The statement is as follows:)

Estimate for extension of powder factory to make yearly output of a total of 6,450,000 pounds of powder (6,000,000 pounds of new powder and 450,000 pounds of reworked powder).

[Compiled from data furnished by powder expert, Dec. 12, 1913.]

	Public works.	Equip-ment.
Cotton picking and dry house: New building, concrete, near new nitrating house, all under one roof.....	\$5,000	.....
Nitrating house and acid tankage equipment under way, all ample.....		.....
Boiling tub outfit:		
26 additional tubs.....		\$10,000
Foundations, drains, platforms, piping, and setting up.....		5,000
		15,000
Pulping house:		
Increase of house.....	35,000	.....
4 additional pulpers.....		8,000
11 additional poachers.....		10,000
2 additional stock tanks.....		2,000
Shafting, installation, etc.....		3,500
4 100-horsepower motors.....		4,000
1 50-horsepower motor.....		500
Settling vats.....		3,500
		31,500
Ether house:		
Addition to present house.....	5,000	.....
3 ether stills.....		8,000
4 alcohol stills.....		6,000
Installation, tankage, etc.....		2,000
		16,000
Dehydrating house:		
To install 3 more presses.....		10,500
Installation and piping.....		2,000
		12,500
Alcohol storage:		
11 new tanks.....		6,000
Extension of building, etc.....	3,000	.....
Mixing house:		
Provide sifting drums, in separate buildings, motor driven.....		2,500
3 mixers.....		6,800
2 presses.....		2,000
1 motor.....		500
1 diphenylamine mixing tank.....		500
4 rooms.....	4,000	.....
Installation, shafting, etc.....		1,000
		13,300
Press house:		
2 presses, die.....		8,000
1 press, strainer.....		4,000
1 press, blocking.....		1,000
Piping, installation, etc.....		2,000
Extension of building.....	1,000	.....
2 powder cutters.....		1,000
		16,000
Solvent recovery (use present brick building for compressors only; install 32-ton compressing outfit, with 2 new houses for additional cans, about 32):		
Houses.....	12,000	.....
Machinery and installation.....		23,000
Dry houses:		
10 new houses, 150,000 pounds each.....	55,000	.....
4,000 feet track.....	7,000	.....
	62,000	.....
Storage facilities:		
Cotton stores.....	10,000	.....
Pyro.....	2,000	.....
2 powder magazines.....	14,000	.....
	26,000	.....

Estimate for extension of powder factory to make yearly output of a total of 6,450,000 pounds of powder (6,000,000 pounds of new powder and 450,000 pounds of reworked powder)—Continued.

	Public works.	Equip-ment.
Power (the present boiler house and power house is ample to provide electric power; for steam to be used at other points provide boiler house near coal dock):		
House, stacks, and foundations.....	\$40,000	
Machinery and installation.....		\$80,000
Coal hoisting and storage.....	20,000	
New standpipe.....	15,000	
5 wells and accessories.....	30,000	
General:		
Trolleys, flat cars, coal cars.....		15,000
Steam, water, air lines.....		15,000
Power lines, electric.....		3,000
Sewers.....	3,000	
Laboratory extension.....	5,000	
Powder-box storehouses.....	5,000	
Cotton purification plant—		
Buildings.....	50,000	
Machinery and installation.....		50,000
Box factory for powder boxes, and general carpenter shop—		
Building.....	7,000	
Machinery and installation.....		3,000
Shop for tinsmiths.....	2,000	
Shop for pipefitters and blacksmith.....	2,500	
Tools for machine shop.....		7,000
Railroad trolley system extension.....	3,000	
Railroad track extension.....	5,000	
Concrete water reservoirs (save all).....	3,000	
General storehouse facilities.....	15,000	
New wharf on Potomac; wharf, grading, railroad trolley system, etc., 1,000 feet north of bombproof.....	100,000	
Contingent expense for handling material and outside expense.....		15,000
Total.....	464,500	321,420
Grand total.....	\$785,920	

¹ This item may be omitted for the present and may be omitted definitely, provided we can get either the Pennsylvania or the Baltimore & Ohio R. R. to run a spur down to the proving ground.

The CHAIRMAN. What does that contemplate?

Admiral STRAUSS. That contemplates increasing the facilities of the powder factory so that we can manufacture 6,000,000 pounds of new powder per annum, and rework about 500,000 pounds.

The CHAIRMAN. What would be the constituent parts of that extension?

Admiral STRAUSS. It contemplates an addition of \$465,000 in public works; that is, buildings, railroad extensions, alcohol and ether storage (they are stored in vaults), storehouse facilities, additional boiler plant, additional coal-handling plant, and the necessary additions to the several houses to carry on this increased work. All those items amount to \$464,500 and the machinery plant amounts to \$321,420.

The CHAIRMAN. Making a total of?

Admiral STRAUSS. \$785,920 for the whole project.

The CHAIRMAN. You are speaking of buildings, is that enlargement or extension of existing buildings or is it new buildings?

Admiral STRAUSS. Some will be new and others additions to the old buildings.

Mr. BROWNING. Have you any plan or blue print of the proposed extension with you?

Admiral STRAUSS. I have a map of the existing plant, and I can indicate where the additions will go.

Mr. BROWNING. That is what I would like to see. Do you think it is advisable for the Government to extend this powder plant?

Admiral STRAUSS. I think it is generally advisable for the Government to have in its power the ability to control the price of all the things that it needs.

Mr. BROWNING. It does that now in the case of powder?

Admiral STRAUSS. Congress has limited the price of powder for this year.

Mr. BROWNING. They limit the price which they pay for the powder. Did you notice in the hearings of the other day a statement of the reasons why the present Government smokeless-powder situation should be left undisturbed?

Admiral STRAUSS. Yes, sir; but I have not had a chance yet to read them. I have them in the office.

(Thereupon the committee adjourned to meet to-morrow, Friday, January 23, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Friday, January 23, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL JOSEPH STRAUSS, CHIEF
BUREAU OF ORDNANCE—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Strauss, Chief of the Bureau of Ordnance.

When we adjourned yesterday we were considering the item on page 56 of the bill for the extension of the powder factory at the proving ground, Indian Head.

Admiral, I believe you stated that this extension embraced both enlargement of existing buildings and the erection of new buildings?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. And also enlarging some of the facilities for the machinery, etc.?

Admiral STRAUSS. Yes, sir; machinery enlargement and railroad extensions.

The CHAIRMAN. You have railroads there at present?

Admiral STRAUSS. Yes, sir; we have about seven miles of standard-gauge railroad there now.

Mr. BUTLER. Is that a siding or on the main line?

Admiral STRAUSS. That railroad is all embraced within the proving-ground territory, and has no connection with any outside railroad.

Mr. BUTLER. It is the Government's siding?

Admiral STRAUSS. It is a means of transporting material from one building to another within the area embraced in the powder-factory grounds.

Mr. BUTLER. What proportion of the powder do we manufacture now?

Admiral STRAUSS. We manufacture a little less than half.

Mr. BUTLER. If Congress should see fit to develop the Government powder plant as you request, it will give the Government an opportunity to manufacture what proportion?

Admiral STRAUSS. It would give us the means of manufacturing all of the powder that we need for a building program such as we have presented this year.

Mr. BUTLER. What proportion of the whole powder, may I ask?

Admiral STRAUSS. All of the powder.

Mr. BUTLER. If you enlarge this plant which you have recommended, it will give the Government facilities to manufacture all the powder we will need in the Navy in peace times?

Admiral STRAUSS. Yes, sir.

Mr. TALBOTT. How about the reserve?

Admiral STRAUSS. For a few years we would have to buy powder outside to make up the desired reserve.

Mr. BROWNING. Admiral, do you think it advisable for the Government to manufacture all of its own powder?

Admiral STRAUSS. I think that the Government should be in a position to buy powder outside, if necessary,

Mr. BROWNING. But if the Government makes all of its own powder, what is to become of the powder plants now in existence?

Admiral STRAUSS. Unless the powder plants now in existence get foreign orders I presume they would cease to operate.

Mr. BROWNING. If the Government were to depend only upon its own powder plant, in case of an accident or in time of war we would be in rather a serious predicament, would we not?

Admiral STRAUSS. I think the capacity of the outside plants to-day is rated at about 10,000,000 pounds per annum, and that capacity would be an asset in time of war.

Mr. BROWNING. Do you not think it advisable—take, for instance, the Spanish War, when the Du Pont Co. very quickly built a plant to manufacture powder for the Government—that a concern of that kind, which seems at all times to have treated the Government fairly, should be in existence so that the Government could have another supply?

Admiral STRAUSS. It was an advantage to have that firm in existence when the war broke out.

Mr. BROWNING. It would always be an advantage, would it not?

Admiral STRAUSS. At the time the Spanish War took place we had no plant at all except a small experimental one at Newport, and that plant turned out three or four hundred pounds of powder a day after we got settled as to the character of smokeless powder we desired.

Mr. BROWNING. Has not the Du Pont Co. always been of great assistance to the Government in the manufacture of powder?

Admiral STRAUSS. We have gotten many good things from the Du Pont Co.

Mr. BROWNING. The Government makes no appropriation at all for experiments and development of the powder?

Admiral STRAUSS. We use some of the money available for experimental work at Indian Head. The Du Pont Co. has a very large experimental laboratory which they use for all of their purposes connected with explosives. I do not know how much of that is devoted, either in plant or money, especially to the question of smokeless powder.

Mr. BROWNING. They have always given the Government the advantage of their experiments?

Admiral STRAUSS. We have always had the advantage, so far as I know.

Mr. BROWNING. I have placed in the record of last Tuesday the reasons why the present Government smokeless-powder situation should be left undisturbed. Have you read those reasons?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. What have you to say regarding them?

Admiral STRAUSS. To give an answer to the statements made there I would prefer to write them. They are substantially correct, but I would like to go over them and discuss them in writing.

Mr. BROWNING. Please put that in the record.

Admiral STRAUSS. Yes, sir; I will.

(The statement referred to is as follows:)

Referring to the statements contained in the hearings entitled "Reasons why the present Government smokeless powder situation should be left undisturbed": These reasons are discussed seriatim, under the same headings, as follows:

First. Heretofore no difficulty has been experienced in controlling the price of powder, and possibly such control under the existing arrangement might continue indefinitely. It is possible, however, that a difference of opinion might arise as to the proper price to be paid to the Du Pont Co., in which case the Government would not be in a position to dictate terms. The Government does prepare the specifications, supervise the manufacture, and has, for several years past, fixed the price to be paid for the finished product.

Second. The Du Pont Co. has made large investments with the expectation of getting a large amount of Government business and but a small portion of its smokeless powder plants could be used for other purposes. Since the beginning of the manufacture of smokeless powder, however, the Navy has placed orders in excess of \$26,000,000 for smokeless powder, and the total profit on this sum would undoubtedly reimburse them for their investment should the plants now become valueless, and besides, yield them a very fair interest on the capital.

Third. The question of the cost to manufacture smokeless powder is discussed at length in this and previous hearings. What constitutes a fair profit is a matter which I do not feel competent to discuss. The hazard in manufacturing smokeless powder is negligible.

Fourth. I do not believe that there would be serious danger of the Government plant being destroyed, even in time of war.

Fifth. The large capacity of the Du Pont plants is a valuable asset for the Government.

Sixth. No discussion.

Seventh. I am not able to state what amount the Du Pont Co. spends for experiments, but they undoubtedly do spend large sums for experimental work and they have given the Government the advantage of it, either free or for a nominal consideration. The excellence of our smokeless powder can hardly be ascribed altogether to the experimental work done by the Du Ponts. The rigid specifications exacted by the Government as based on our own experience have contributed largely to that result.

Eighth. The Du Pont Co. has been very liberal in allowing the Government to use economical methods of manufacturing, such as recovery of solvent, reworking of powder, nitrating, etc., but I can not state whether or not the saving to the Government has "far exceeded the profits they have obtained from the Government."

Ninth. The Government does look to outside manufacturers for explosives other than smokeless powder, but I am not prepared to state that the manufacture in any considerable quantities has been at an "actual loss."

Tenth. I have reason to believe that the Government is buying powder from the Du Pont Co. about 25 cents cheaper than the company is selling it abroad.

Eleventh. I agree with the statement that a Government monopoly is not advisable in respect to the manufacture of powder. I believe that the Government needs competition as well as the private manufacturers need it.

Twelfth. The reason for this is discussed later.

In regard to the statements "Indicating fair treatment":

1. *Conduct in war.*—On March 17, 1898, the Bureau of Ordnance made two requisitions for brown prismatic powder. One was for 2,278,000 pounds and was placed with the California Powder Works; the other was for 2,308,000 pounds and was placed

with the Du Pont Co. The price was to be \$0.32175 per pound. In June, 1898, when the deliveries were not quite one-quarter completed, the price for the rest of the powder was reduced to 29 cents per pound. In the latter part of 1889, the Du Pont Co. entered into an agreement with certain foreign powder makers, by which the company learned certain trade secrets for making brown powder. In consideration of these the Du Pont Co. was to pay a royalty until a certain total amount of royalty had been paid. I can find no written agreement between the Du Pont Co. and the Bureau of Ordnance stating that the price of powder would be reduced by the amount of the royalty as soon as the total royalty had been paid, but references in letters indicate that at least a verbal agreement to this effect existed. Referring to "Extract from hearings" on the "fortifications appropriation bill" before the subcommittee of the Committee on Appropriations, Sixty-second Congress, third session, "Cost of powder," on page 327, there is a letter from the Chief of Bureau of Ordnance dated December 13, 1890, asking the Du Pont Co. for a statement of how much in royalties had been paid. On page 350 a letter from the Du Pont Co. to Mr. B. Peyton, of the California Powder Works, dated July 22, 1898, contains this statement: "We therefore suggested that July 1 should be the date at which the new price took effect, but unfortunately the Government was entitled to have received the 29-cent price sometime previous to July 1. From the above it seems that at least a verbal agreement to reduce the price of powder by the amount of the royalty existed in June, but there is no record to show whether this agreement existed prior to March 17, 1898, when the requisitions were placed, or was volunteered by the company when their payment of royalties ceased.

In addition to the 4,586,000 pounds of powder ordered on March 17, 1898, the bureau later agreed to order another 1,000,000 pounds of powder if the Du Pont Co. would install additional machinery and thus increase their output. Of this total of 5,586,000 pounds the company agreed to cancel the contract for 2,375,000 pounds of this powder, the manufacture of which had not been completed when the war closed. The company made no charge for canceling this contract.

2. *Dehydration by alcohol.*—The Du Pont Co. invented and designed the present hydraulic press for dehydrating pyrocellulose. The Government is using this method with presses of the same design. Prior to that time, in France dehydration was accomplished by spraying with alcohol. The process invented by the Du Ponts made the manufacture of smokeless powder practically a safe industry.

3. *Recovery of alcohol.*—When the manufacture of smokeless powder was first started for the Government, the Government furnished the alcohol used. The company did at its own expense develop a method for recovering a large percentage of this solvent. A description of this method was furnished the Government without cost, and the system was installed at Indianhead beginning with the manufacture of powder at that place.

4. *Reworking powder.*—The method of reworking powder now in use at Indianhead was designed by the Du Pont Co., but the successful dehydration of this reground powder was first worked out at Indianhead.

5. *Stabilizer.*—The statements in regard to the Du Pont Co.'s bringing to the attention of the Government the results that could be accomplished by using diphenylamine as a stabilizer are correct; the stabilization of the powder has probably doubled its life and resulted in a very great saving to the Government.

6. *Powder for small arms.*—The Navy purchases its small-arms ammunition from the War Department. This powder was invented and developed by the Du Pont Co. and greatly increased the life of the .30 caliber rifle.

7. *Nitration of cotton.*—The statements in regard to the new mechanical nitrators are correct. The Du Pont Co. has recently given the Navy Department the plans, specifications, and the right to use this process for a nominal consideration, and the system is now being installed at Indianhead, where it will result in a material economy.

8. *Stabilite.*—The statements in regard to stabilite are correct, but I have no information in regard to the amount expended by the company in developing this powder.

9. *Army powder plant.*—The statements in regard to the Army powder plant are believed to be correct.

10. *The pyro incident.*—The statements in regard to the pyro incident are correct. The officials of the company reported the fraud to the bureau as soon as they discovered it.

Mr. BROWNING. Yesterday you had a map showing the Indianhead plant. There was not marked on that map any of the present buildings?

Admiral STRAUSS. Yes, sir; all the buildings are marked on the map.

Mr. BROWNING. On the map you had yesterday?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. Under this improved plan that you have, are those buildings to be enlarged or are they all to be new buildings?

Admiral STRAUSS. Some will be enlarged and others will be entirely new, notably the dry houses of which we require a great many.

Mr. BROWNING. They will be new?

Admiral STRAUSS. Yes, sir; they will be new.

Mr. BROWNING. I think you stated yesterday that it would cost, by the time you were through, something like \$750,000?

Admiral STRAUSS. \$785,920.

Mr. BROWNING. Nearly \$800,000?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. Admiral, you have stated this morning that you had the buildings marked on that map. Please let me see the map and where the buildings are. I would like to know what buildings you propose to enlarge?

Admiral STRAUSS. This [indicating] is the existing plant now. Cotton picking and dry house, new building, concrete, near new nitrating house, all under one roof, \$8,000.

Mr. BROWNING. Where is the present one?

Admiral STRAUSS. One hundred and forty-nine is the nitrating house [indicating].

Mr. BROWNING. This will be a new building?

Admiral STRAUSS. Yes, sir; that is the cotton-picking and dry house. Thirty-six additional boiling tubs, with foundations, drains, platforms, piping, and setting up, \$15,000.

Mr. BROWNING. Are they to be an addition to the present building?

Admiral STRAUSS. These tubs are in the open.

The CHAIRMAN. You have existing tubs?

Admiral STRAUSS. Yes, sir. The existing tubs are in the open.

The CHAIRMAN. And these will be in addition to the existing tubs?

Admiral STRAUSS. Yes, sir. Pulping house, \$35,000. That will be an addition to the existing house, that building there [indicating]. The equipment for the pulping house will cost \$31,560. That is machinery.

The CHAIRMAN. You have machinery already in that house?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. And this will be additional machinery?

Admiral STRAUSS. This will be additional machinery for the enlargement of the capacity of the old house.

Ether house, \$5,000, under "Public works." That is an addition to the present house, costing \$5,000, and the equipment for the manufacture of ether, in addition to that at present installed, will be \$16,000. Dehydrating house, new equipment, no enlargement of the old house, \$12,500.

Mr. BROWNING. No enlargement?

Admiral STRAUSS. No enlargement; no, sir.

Alcohol storage, 11 new tanks, extension of building, etc., \$3,000.

Mr. BROWNING. That is an extension of the present building?

Admiral STRAUSS. Yes, sir.

Mixing house and extension of the building costing \$4,000, and increase of the plant amounting to \$13,360. Press house, extension of the building costing \$1,000, and new equipment costing \$16,000. Solvent recovery: We expect to use the present brick building for the compressors only. Install 32-ton compressing outfit; that is, for the ice plant and two new houses for additional solvent recovery cans, making in all \$12,000 for the houses and \$23,000 for the machinery installation.

Mr. BROWNING. Those are new houses?

Admiral STRAUSS. That will involve new construction. The plan is to shift equipment about so as to utilize the old building. The new construction, as I said before, amounts to \$12,000. Ten new dry houses, 150,000 pounds capacity each, costing \$55,000.

The CHAIRMAN. Are they to adjoin the old ones or will they be separate and distinct?

Admiral STRAUSS. They will be separate from the old ones. We have at present 13 dry houses, all separated a sufficient distance so that if one blows up it will not endanger its neighbor.

The CHAIRMAN. You separate all of them?

Admiral STRAUSS. All the dry houses are separated.

The CHAIRMAN. These are additional houses to the dry houses you have?

Admiral STRAUSS. Yes, sir; 10 new dry houses costing \$5,500 apiece or \$55,000 for all of them, to which we must add under "Public works" 4,000 feet of track costing \$7,000. That is to enable us to handle the powder to and from these dry houses.

The CHAIRMAN. Is that an extension of the existing track?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. You will expend \$5,500 each for the dry houses?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. How large are the houses?

Admiral STRAUSS. They will hold about 150,000 pounds of powder each.

Mr. BATHRICK. What is the size of the houses?

Admiral STRAUSS. Main building 28 feet by 45 feet. Lean-to shed 14 feet by 45 feet.

Mr. BATHRICK. Made of what?

Admiral STRAUSS. Made of wood framing and covered with corrugated sheet steel. In these houses we have the powder bins, the containers for the powder which is drying. Then there is some machinery for heating, blowing hot air through the mass of powder.

Mr. BATHRICK. Is each house supplied with a power plant of its own?

Admiral STRAUSS. No, sir; we have a central electric power plant and a central heating plant.

Mr. BATHRICK. You blow hot air through the tubes?

Admiral STRAUSS. No; we have a steam heater at each house outside the building and an electric blower which takes in the cold air and blows it through the heating coils and through the house.

Mr. BATHRICK. Have you any idea what the electric blowers cost? They are all connected with a motor?

Admiral STRAUSS. It is all connected up.

Mr. BATHRICK. What kind of dry houses do they build in private factories?

Admiral STRAUSS. They are pretty much all the same. We have two ways of drying powder. One is to force hot air through the mass of powder and the other is to place the powder in trays, in thin layers, heat the house generally, and allow the solvent to evaporate in that way. The difference is that the tray system takes a very much larger house for a given output.

Mr. BATHRICK. These bins, what are they made of?

Admiral STRAUSS. Pine.

Mr. BATHRICK. Just a one-story building?

Admiral STRAUSS. Yes, sir; just a one-story building.

Mr. BATHRICK. Of wood and corrugated iron?

Admiral STRAUSS. Of wood and corrugated iron.

Mr. BROWNING. Do you think that is good construction?

Admiral STRAUSS. We had one of those houses struck by lightning and blown up while I was at the proving ground. That house contained 70,000 pounds of powder. It would not be of any advantage to have a house of fireproof construction because its contents are so destructible.

Mr. BATHRICK. You want \$5,500 to pay for the entire equipment, blowers, etc.?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Have you any figures to indicate what the cost of the building will be?

Admiral STRAUSS. The \$5,500 takes in the building, blowers, and heaters.

Mr. BATHRICK. What is the cost of the building?

Admiral STRAUSS. I will insert that.

(The statement referred to is as follows:)

Detailed cost and size of 10 new dry houses, at \$5,500 each.

Brick foundations.

Side walls and roof of wood covering outside with roof sheathing paper and galvanized corrugated iron.

Lined inside with asbestos paper and flat galvanized iron.

Building to consist of a dry room in the main part with 10 large bins specially constructed for drying powder, with hot-water pipes beneath, and a shed on one side with lean-to roof attached to and forming a part of the building, for packing and storing powder in bad weather.

Size of main building, 28 by 45 by 22 feet high.

Size of lean-to shed, 14 by 45 by 8 feet high.

Mr. BATHRICK. I had been under the impression, which I will be glad to have dispelled, that certain buildings constructed by the Navy, such as officers' quarters, cost more than they do for private parties. Here is a very cheaply constructed building, approximately 60,000 cubic feet at 20 cents a foot, which is the rate ordinarily figured on?

Admiral STRAUSS. It will not cost that. I do not think that house will cost more than 10 cents a cubic foot. It is very cheap construction and so made because of the possibility of its being destroyed and having no other use except to store the powder while drying.

Mr. TALBOTT. The powder that is made for the Government by private parties is not purchased by anybody else except the Government, that kind of powder?

Admiral STRAUSS. The Du Pont Co. have sold powder to other governments. I think they have had orders from the Argentine Government for a considerable quantity. I believe, though I am not sure, that they have sold some to Brazil.

Mr. TALBOTT. But it is not an article of general merchandise?

Admiral STRAUSS. No, sir.

Storage facilities, new cotton storehouse, \$10,000.

Mr. BROWNING. That will be entirely new?

Admiral STRAUSS. It will be well to have two separate buildings. The construction is very cheap. No great advantage would be gained by putting the two houses together, and it would be an advantage to have them separated in case of fire. Then \$2,000 for a guncotton storehouse, a separate building. That is for storing the wet guncotton • to be used in the manufacture of powder. Two powder magazines, \$16,000. They will be new and separate. We have two at the powder works now.

Mr. BROWNING. You do not keep those very close together?

Admiral STRAUSS. No, sir.

Mr. BUTLER. That impresses me as being very cheap. Are these small ones?

Admiral STRAUSS. Building 148 will contain a million pounds of powder.

Mr. BUTLER. How does that compare with the powder magazine we constructed at Hingham? It seems to me that cost a great deal more money.

Admiral STRAUSS. I built that powder magazine and built it of concrete blocks. There is no trim about it. In fact, all of the buildings at Indianhead of recent construction are exceedingly simple in design with no effort made to have any architectural effect.

Mr. BUTLER. Please give us a comparison of the cost between this proposed magazine and the one constructed at Hingham?

Admiral STRAUSS. I will insert that.

(The statement referred to is as follows:)

The buildings at the Hingham magazine, referred to, are 50 by 90 by 21 feet height to the eaves; cubic capacity, 127,193 feet; cost, \$10,927 and \$11,646. Cost was low, as sand and gravel for concrete was on hand on the reservation and in proper proportions.

The proposed magazine at the powder factory is similar to building No. 148, which is 99 feet long, 31 feet wide, height to eaves, 16 feet; cubical contents, 43,400 feet; cost, \$7,260.79; built in 1907 by Indianhead labor. In view of the increased cost in labor and material an estimate of \$8,000 for duplicating such a magazine at the present time is considered very conservative.

The present boiler house and power house is ample to provide electric power. For steam to be used at other points and to provide a boiler house near the coal dock----

Mr. BROWNING (interposing). That will be a new building?

Admiral STRAUSS. That will be a new building down at Matta-woman Creek, near our present coal supply. The house, stacks, and foundations will cost \$40,000, and the machinery installation will cost \$80,000. Coal hoisting and coal storage, \$20,000. New stand-pipe, \$15,000. Five new wells with accessories, \$30,000. Those are artesian wells about 400 feet deep.

Mr. BATHRICK. What is the size of the pipe?

Admiral STRAUSS. We have several sizes there. We began with a very small well to supply the first wants of the plant, and have since driven several additional wells.

Mr. BUTLER. Does your estimate include the pumps?

Admiral STRAUSS. It includes the equipment. They do not deliver the water at the surface. We blow the water up to the surface and then pump it by an electric pump into the standpipe to give us the necessary head.

Mr. BATHRICK. You do not remember the size of the pipe?

Admiral STRAUSS. As I say, we began with a very small one and as our needs increased we dug additional wells until we have finally a water supply amounting to a million gallons in 24 hours.

Mr. BROWNING. Do you find any difference in the supply of water as you drive the additional wells?

Admiral STRAUSS. No. The water supply seems to increase with the number of wells dug.

Mr. BROWNING. And does not interfere with the wells already there?

Admiral STRAUSS. No, sir.

Mr. BATHRICK. I have had some experience with wells. They cost about \$1 a foot with a 4-inch pipe. Do you know what your cost is?

Admiral STRAUSS. We do not get them as cheap as that.

Mr. BATHRICK. Have you to go through rock?

Admiral STRAUSS. No. We have been contracting for those wells, payment contingent upon the production of water, so that there is some risk to the man who takes the contract, and I suppose that adds to the expense.

Mr. BATHRICK. Please put in the record what the wells cost and the size of the pipe.

Admiral STRAUSS. Yes, sir. Five wells and accessories, \$30,000, making \$6,000 apiece.

Mr. BATHRICK. What is the equipment that goes with the wells?

Admiral STRAUSS. The equipment necessary to raise the water at Indianhead is, first, an air compressor. Air, at about 100 pounds pressure, is pumped to nearly the bottom of the well in a small pipe. Then there is a rising pipe that delivers this water at the surface into a tank, and the water is pumped from this tank by an electric pump. We use an electric pump because it does not require any attendants. We simply start these pumps and close the building, and they pump all day without any other attention than to require a man to go in there occasionally and oil them.

Mr. BATHRICK. Now, what I am trying to interest myself in generally is to find out from you bright gentlemen who have charge of these matters—I know you are honest, sincere, and careful—whether or not the Government is paying too much money for any of this material.

Admiral STRAUSS. The wells dug while I was at the proving ground were let out by contract after advertisement. We accepted the lowest bid. The cost is probably more at Indianhead, because it is a very out-of-the-way place and the need of wells for a very large territory around there is entirely confined to the proving ground. The man who dug the wells that I refer to had to transport his equipment, get his skilled force there and subsist it, and that made it cost more, undoubtedly, than it would in a more populous place.

Mr. BATHRICK. Please place in the record a detailed statement.

Admiral STRAUSS. I will give a detailed statement as to the cost of the wells already dug.

(The statement referred to is as follows:)

1. The records of this station show that one well driven in 1898 by the Government cost \$2,522.57. Total depth of well, 432 feet. Outside casing, 4 inches in diameter; depth, 266 feet. No strainers. Delivery pipe, 3 inches. Air pipe, one-half inch.

2. The records of this station show that one well driven in 1900 by the American Wells Co. cost \$5,978.56. Total depth of well, 388 feet. Outside casing, 10 inches in diameter; depth, 196 feet. Next casing, 8 inches in diameter; depth, 329 feet. Next casing, 6 inches in diameter; depth, 376 feet. Delivery pipe, 4 inches in diameter; depth, 388 feet. Fitted with three strainers.

3. The records of this station show that one well driven in 1903 by DeWitt & Co. cost \$4,509.14. Total depth of well, 409 feet. Other data regarding this well is not available, but its general characteristics are estimated to be the same as the other wells.

4. The records of this station show that two wells driven in 1910 by Edward Ohlman cost \$10,809. Total depth of well No. 4, 383 feet 8 inches. Outside casing, 10 inches in diameter; depth, 150 feet. Next casing, 8 inches in diameter; depth, 334 feet. Delivery pipe, 4 inches in diameter; depth, 376 feet 4 inches. Fitted with four strainers. Air pipe, 2 inches.

5. For well No. 5. Well No. 5 included in the above expense with No. 4. Total depth, 385 feet. Outside casing, 10 inches in diameter; depth, 100 feet 3 inches. Next casing, 8 inches in diameter; depth, 383 feet. Delivery pipe, 4 inches in diameter; depth, 395 feet. Fitted with three strainers. Air pipe, 2 inches.

In view of the above it is believed that \$6,000 is not an excessive estimate for driving an average size well, when the increased cost of labor and material is considered.

The CHAIRMAN. And please also furnish us with a detailed estimate upon which this estimate is made of \$6,000, giving the details of that.

Admiral STRAUSS. I will put that in, how this \$30,000 is to be expended for an additional water supply, in as much detail as I can. I wish to say that it may be cut down or raised a little. This, of course, is not an exact estimate.

The following estimate in detail shows how \$30,000 is to be expended for driving five wells:

Each well to have total depth of about 400 feet; outside casing, 10-inch, 150 feet; next casing, 8-inch, 380 feet; delivery pipe, 4-inch, 380 feet; air pipe, 2-inch, 275 feet.

Five, at \$5,000.....	\$25, 000
Accessories wanted:	
Addition to pump house and tanks.....	\$2, 100
Two pumps, 8 by 10.....	1, 500
Two motors, 35-horsepower.....	750
One meter.....	600
Gauges, etc.....	50
Total.....	5, 000
Grand total.....	30, 000

General additions, trolley lines, flat cars, coal cars, estimated at \$15,000; steam, water, air lines, \$15,000; electric power lines, \$3,000; sewers, under "Public works," \$3,000; laboratory extension, \$6,000. We have a very good laboratory at the proving grounds now, a very busy place. We found it necessary some years ago to build an additional laboratory close to the original one. That is now crowded, and if any further extension is necessary at the proving ground it would require a laboratory similar to the second one we have already built.

Mr. BROWNING. A new building?

Admiral STRAUSS. A new building, at \$6,000. Powder-box storehouse, \$5,000. That would be a new building, simply to store empty powder boxes to prevent their deterioration.

Mr. BROWNING. Is there any such building there now?

Admiral STRAUSS. We have two.

Mr. BROWNING. They are not large enough?

Admiral STRAUSS. They would not be large enough for the increased plant.

Mr. BROWNING. Especially if you are going to double the supply?

Admiral STRAUSS. Yes, sir. The idea in having so many buildings is to prevent the fire loss from being excessive and to prevent a fire from interrupting the chain of work.

Cotton-purification plant, \$50,000 for building and \$50,000 for machinery and installation. We have a purification plant which was not used for a very long period after the powder plant was started. The reason for giving that work up was that we bought nitrating material that could only be purified by a special process; that is, the short lint that is removed from cotton seed after the regular ginning. It is our principal nitrating material now. But if we extend the powder factory, the chances are that we will not be able to get enough of that material and would have to buy other kinds and purify it ourselves.

The CHAIRMAN. The one you have would not answer?

Admiral STRAUSS. No, sir; it would not be large enough. The one we have was built originally for a 1,000-pounds output. That was the original idea in constructing the powder factory.

The CHAIRMAN. For 24 hours?

Admiral STRAUSS. Yes.

The CHAIRMAN. What is the size of the one you contemplate?

Admiral STRAUSS. The one we contemplate is nearly 20 times as large as that.

The CHAIRMAN. Would the other one be operated in conjunction with it or be used for something else, and would you depend on the new one?

Admiral STRAUSS. I think we would have to start a new one, although we might be able to use the old plant.

The CHAIRMAN. Was it contemplated that you would use both, or would use this new one altogether, and use the old one for something else?

Admiral STRAUSS. We use the old building for storage. The plant has been more or less dismantled, but the principal part of it is there now. Whether it would be advisable to use it I can not say.

Box factory for powder boxes and general carpenter shop, \$7,000 for the building and \$3,000 for the machinery and installation.

Mr. BROWNING. Have you anything of that kind there now?

Admiral STRAUSS. We have a carpenter shop.

Mr. BROWNING. This would be a new building?

Admiral STRAUSS. This would be a new building. We do not make boxes at the proving ground. We do make them at the navy yards.

Mr. BROWNING. You want to make them at the proving ground?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. What is the objection to having them made at the navy yards and shipped to the proving ground?

Admiral STRAUSS. There is no very great objection, except the distance.

Mr. BUCHANAN. The cost of shipping?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Can you make them at the navy yards as cheaply as you could at this new building?

Admiral STRAUSS. I think perhaps they could.

Mr. BATHRICK. They have the capacity to make them now?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. In other words, the Government is in the business now of making these boxes?

Admiral STRAUSS. We make them at Norfolk and at the Washington yard.

Mr. BATHRICK. How far is that from Indianhead?

Admiral STRAUSS. The Washington Navy Yard is 30 miles from Indianhead.

Mr. BATHRICK. You make the boxes in Washington, 30 miles from Indianhead?

Admiral STRAUSS. Yes.

Mr. BATHRICK. You make them as cheaply there as you could at Indianhead?

Admiral STRAUSS. I think we can.

Mr. BATHRICK. Does it look to you like a good business proposition to start a factory to make boxes at the proving ground when you make them at the Washington Navy Yard, only 30 miles away?

Admiral STRAUSS. We can strike out that item without any great difference in the project.

Mr. BATHRICK. I really think it should be stricken out.

Mr. BUCHANAN. Will you please put in the record what would be the saving to manufacture them at Indianhead?

Admiral STRAUSS. My estimate would be of little value.

Mr. HENSLEY. You say that some of the boxes are made at Norfolk and some at Washington?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Do you remember whether or not there is a difference in the cost of the boxes made at the Washington Navy Yard and at Norfolk?

Admiral STRAUSS. There has been a slight difference in cost in favor of the Norfolk yard.

Mr. HENSLEY. If I am not badly mistaken, I secured some information on that subject while at Norfolk. Are you able to state about what the difference is?

Admiral STRAUSS. I will put that in the record, exactly.

(The statement is as follows:)

Cost of powder boxes.

Previous cost at Washington Navy Yard.....	\$4. 68
Present cost by using cheaper material.....	4. 21
Cost at Norfolk Navy Yard.....	4. 14

No boxes have ever been made at Indianhead and it is not believed that they could make them cheaper. All Indianhead needs is a small shop for making repairs boxes. Fifteen hundred dollars would cover this. Item may be omitted entirely.

Mr. BUCHANAN. And what is the cause of the difference in cost?

Admiral STRAUSS. I will ascertain that.

Mr. BUCHANAN. Is it the cost of labor?

Mr. BROWNING. I should imagine that the labor at Norfolk would be cheaper than at Washington. It depends on where the lumber would have to come from also.

Admiral STRAUSS. Norfolk is a big lumber center and would probably have an advantage in that respect.

"Shop for tinsmiths, \$2,000."

Mr. BATHRICK. What do you make in that shop?

Admiral STRAUSS. There is a great deal of tin work done at the proving ground, the repair of boxes which are lined, pipes for conducting gases, and cans for handling guncotton and green powder.

Mr. BATHRICK. Generally, simply a tin repair shop?

Admiral STRAUSS. They have no regular output.

Mr. BATHRICK. How many men do you employ there?

Admiral STRAUSS. Five.

Mr. BATHRICK. Where are they working now?

Admiral STRAUSS. They have a little shop near the power house.

Mr. BATHRICK. You say that you have a shop there and employ five men?

Admiral STRAUSS. Five men are employed.

Mr. BATHRICK. For the necessary repair work, is not that shop large enough now?

Admiral STRAUSS. They estimate that a larger one would be required.

Mr. BATHRICK. Of course I know that they would like to have a larger and better one, but is not that a good shop, and do they not do all of the work necessary to be done?

Admiral STRAUSS. Yes, sir; but this scheme as presented contemplates doubling the work at the factory.

Mr. BATHRICK. But was it not contemplated that with this box factory there would be more tin lining work?

Admiral STRAUSS. No, sir.

Mr. BROWNING. "Shop for pipe fitters and blacksmith, \$2,000." Is that new?

Admiral STRAUSS. That would be new.

Mr. BROWNING. Have you anything of that kind now?

Admiral STRAUSS. When I was there six years ago the blacksmith shop was a shed in the open and the pipe fitting was done principally in the same place. They erected a bench with a pipe cutter and a threading machine.

Tools for machine shop, \$7,000. We have a machine shop at the powder works and also one at the proving ground proper. The machine repair work at a big plant like that is considerable and it requires quite a plant to look out for it.

Railroad trolley system extension, \$3,000. Railroad track extension, \$5,000. Concrete water reservoirs (save all), \$3,000. We have one reservoir now of that sort, which is simply a hole dug in the ground and lined with concrete. It was built with the idea of saving water that had been used for one purpose, cooling, for instance, and then using it again for some other purpose.

Mr. ROBERTS. What is the water supply at Indianhead?

Admiral STRAUSS. About 1,000,000 gallons a day.

Mr. ROBERTS. How do you get it, by artesian wells?

Admiral STRAUSS. Yes, sir. They are nonflowing artesian wells. General storehouse facilities, \$15,000. That is "Public works."

Mr. BROWNING. A new building?

Admiral STRAUSS. Yes, sir. We have one storehouse, a considerable storehouse, but an enlargement such as this would require very much more space and it might be advisable to separate the stores in the two buildings on account of the danger from fire.

New wharf on Potomac, wharf, grading, railroad trolley system, etc., 1,000 feet north of bombproof, that item would cost \$100,000 and would involve excavating a way through a hill back of the present battery. The item of \$100,000 could be eliminated if we could get either the Pennsylvania Railroad or the Baltimore & Ohio Railroad to build a spur down to Indianhead. The matter has not been discussed with the representatives of either of those companies, but it would be a big advantage of they would take it up.

The CHAIRMAN. How far would they have to build, from what point?

Admiral STRAUSS. The nearest point on the Pennsylvania Railroad is at Port Tobacco, about 15 miles away.

Mr. WITHERSPOON. Would it be an advantage to the railroad companies to build it?

Admiral STRAUSS. I think they would get a great deal of freight and it would be an advantage in that way. The Baltimore & Ohio Railroad Co. would have to build about 20 miles, perhaps 25 miles.

Mr. BROWNING. Where from?

Admiral STRAUSS. From Shepards Point, where the railroad freight crosses the Potomac.

Mr. BUTLER. Do you know whether either company has the right of way?

Admiral STRAUSS. I do not know.

The CHAIRMAN. The railroad you are proposing to build would cost \$100,000?

Admiral STRAUSS. It would not be a railroad, but a large stone wharf with a track from this wharf leading to our present system of railroad.

The CHAIRMAN. That is what I am asking you about. You have some railroad. Does the \$100,000 include a part of the construction of the wharf?

Admiral STRAUSS. The \$100,000 would be nearly all wharf and excavation. The railroad would be a very small item in that. It might well have been included in it without naming it.

Mr. BATHRICK. What are the means of transportation now, wholly by water?

Admiral STRAUSS. Altogether by water.

Mr. BATHRICK. I have been by Indian Head, and I notice that you have a dock there now?

Admiral STRAUSS. That is for the purpose of getting the freight from Washington. We float the cars down to Indian Head on barges towed by our own tugs.

Mr. BATHRICK. In other words, the Government has transportation of its own?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. How do you get along with that?

Admiral STRAUSS. We have a great deal of trouble. Unfortunately the dock is in front of the guns, and whenever a barge is tied up there it stops the operation of the battery.

Mr. BATHRICK. What would it cost to move the battery?

Admiral STRAUSS. That would be a very costly and extensive undertaking.

Mr. ROBERTS. It would be cheaper to provide a new wharf?

Admiral STRAUSS. Very much cheaper.

Mr. BATHRICK. How often when a ship is tied up there with freight do you need to use the guns?

Admiral STRAUSS. The guns are being used most of the time. There is firing going on from 7.30 o'clock in the morning until 4.30 every week day.

Mr. BROWNING. I should imagine that the ice in the Potomac at times would interfere?

Admiral STRAUSS. Sometimes it does.

Mr. BATHRICK. How often do you have vessels stop there to deliver and take away freight?

Admiral STRAUSS. Twice a day the tugs come down from Washington. When firing is going on, the tugs must steam out into the river and get out of the way of the shooting.

Mr. ROBERTS. There seems to be some misunderstanding. The \$100,000 you speak of is necessary for a new wharf?

Admiral STRAUSS. That would be an entirely new wharf. We would only have to go out to 15-foot draft, but it should be a wharf of the very best construction for the heavy freight we have to handle.

Mr. ROBERTS. Is any part of the \$100,000 to be expended for railroad tracks?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. How much, about?

Admiral STRAUSS. A very small part. This \$100,000 is just a round estimate for digging through the hill back of the range battery, building a wharf, and running a track. The range battery is close to a hill, about 20 feet high, and there is not space enough back of the battery to run cars, and we would have to dig through this hill or else move the battery.

Mr. HENSLEY. Have you gone into this carefully enough to appreciate the difference in the freight rate, putting in this extension which you speak of as against the railroad company building a spur, so as to know?

Admiral STRAUSS. If the railroad company did give us a rail connection we would not need this wharf.

Mr. HENSLEY. If that is true, how about the freight rate as against the way you now get the freight?

Admiral STRAUSS. I fancy that the freight rate would be very much less. We have to pay a freight bill for transportation to the Washington Navy Yard and then float the cars down the river. It is probable that the further trip over this 15 or 20 miles of road would not greatly increase the freight charge.

Mr. ROBERTS. Do you think that the railroad company would be likely to build the 15 miles of track without a guaranty as to interest on the investment?

Admiral STRAUSS. They would require some guaranty, I suppose.

Mr. ROBERTS. Did you figure out what it was costing to carry this freight from Washington to Indianhead by water?

Admiral STRAUSS. We have it now as a charge against the manufacture of powder.

Mr. ROBERTS. What does that amount to a year in round numbers?

Admiral STRAUSS. In 1912 we shipped freight down the river amounting to 10,887 tons by barge.

Mr. ROBERTS. That is the material used in the manufacture of powder and guns?

Admiral STRAUSS. That is only the material for the manufacture of powder. Our tonnage of guns and materials for the proving ground was 33,700 tons.

Mr. ROBERTS. If you had the spur track to Indianhead, would you send the guns by rail or still carry them by water?

Admiral STRAUSS. It is probable we would send everything by rail and do away with the tug service.

Mr. ROBERTS. How much freight do you ship away from Indianhead by water?

Admiral STRAUSS. Our freight away from Indianhead is powder, and that goes by a Government vessel from the wharf down to the Norfolk magazine. That method of transportation could not very well be improved upon.

Mr. ROBERTS. Is it ever desirable to send powder from Indianhead to some other magazine?

Admiral STRAUSS. It is.

Mr. ROBERTS. Can it be shipped by water as cheaply and expeditiously?

Admiral STRAUSS. Not all of the magazines are located on the water. The only trouble about shipping powder by rail is that they have special shipping days for explosives which interrupts the traffic and that makes the time greater.

Mr. ROBERTS. In any event you would not be likely to ship much powder away by rail?

Admiral STRAUSS. No. We have at St. Julians Creek a magazine that is the general receiving magazine for all of the powder manufactured at Indian Head.

Mr. ROBERTS. I understood you to say that the freight shipped away was powder. Do you not figure the other material coming to Washington as freight coming away?

Admiral STRAUSS. That is freight coming away. The tonnage for powder factory by tugs one way was 10,887, and the tonnage for proving ground by tug one way was 33,700. Of course, a major portion of that tonnage goes back.

Mr. ROBERTS. What did that service cost in 1912, both the powder and the guns?

Admiral STRAUSS. The total cost was \$61,480.11.

Mr. ROBERTS. Does that include the new barges which you have to build from time to time?

Admiral STRAUSS. That includes every cost connected with the service, including the pay of the men running the barges, the repairs and upkeep to the tugs and barges, every cost that we could allot to that service.

Mr. ROBERTS. If you had the spur track, would you do away with the water transportation for the guns?

Admiral STRAUSS. It would be economical to do away with the tug service altogether if we had the railroad. We probably would keep some vessel there as a means of getting to and from the proving ground at our own will.

Mr. ROBERTS. You would do away with the barges and the towing tugs?

Admiral STRAUSS. Yes, sir; I think it would be advisable to do away with the barges.

Mr. ROBERTS. What part of the \$61,000 for moving all of the freight down the river would properly be charged to the ten thousand and odd tons, would it be a pro rata charge?

Admiral STRAUSS. We have prorated it. The amount of charges against powder was \$20,493.37.

Mr. ROBERTS. That would be the amount, probably, that the railroad would get?

Admiral STRAUSS. Yes, sir; they would get that freight.

Mr. BATHRICK. Would they not get the \$61,000?

Admiral STRAUSS. It is just a question of economy, if the rates were good. One of the disadvantages of the present system is that in very cold weather there is thick ice on the river and our communication is interrupted. That would not be the case if we had the railroad.

Mr. BATHRICK. Who in your department would be the proper person to take that matter up with the railroad companies and ascertain if you can make the arrangements?

Admiral STRAUSS. The Secretary of the Navy.

Mr. ROBERTS. How long would it take you to get a gun, for instance, from the Washington yard down to Indian Head by rail if you had the spur track in there, and how would that time compare with moving it down the river with the tugs and barges?

Admiral STRAUSS. If they go over the Baltimore & Ohio, it would be about 20 or 25 miles. Of course, we could not send the guns down at our own convenience, we would be subject to the freight-train schedule.

Mr. ROBERTS. On the average, could you send them to Indian Head and return by rail as expeditiously as now?

Admiral STRAUSS. As a general thing, I think it would not be as quick by the rail system. We would be subject to their freight-train schedule.

Mr. ROBERTS. The compensation would be the certainty of delivery when there is ice on the river?

Admiral STRAUSS. Yes, sir; we have had interruptions, sometimes very serious ones, and it might in the case of a very large plant interrupt the output and cost the Government a considerable amount of money and the men working there loss of employment.

Mr. ROBERTS. Considering the advantages and disadvantages of each method of transportation, in your opinion would the exclusive all-rail transportation be as satisfactory on the whole as the water? Balancing the advantages and disadvantages of each method, which would give the better general satisfaction, do you think?

Admiral STRAUSS. They both have points, as I have said, in their favor. One is that there are times when our present system is entirely inoperative. The occasions are rare, but they do occur. With the railroad they would never occur. Yet, on the other hand,

we would be subject to the freight-train schedule of the railroad company, and while our process of transportation might be slowed, the general result would be surer than it is at present.

Mr. BUTLER. In order to make this plant absolutely successful you should have both rail and water communication.

Admiral STRAUSS. We could run the plant and do away with the water communication.

Mr. BUTLER. But still it would be better for the Government to have both?

Admiral STRAUSS. The Government must have a tug at the Washington Navy Yard and this would be available for emergencies.

Mr. BUTLER. It has always seemed to me that we should have rail communication with Indianhead?

Admiral STRAUSS. Yes, sir; I think it would be an advantage. At first, when they establish the place, they did not encourage any such idea; they wanted to keep it away from all contact with the outside world.

The CHAIRMAN. With reference to the rail transportation and the powder factory with the locomotives going in, what would be the increased danger from fire?

Admiral STRAUSS. If there were a railroad it would join our railroad outside of the powder factory area.

The CHAIRMAN. Do you run by electric locomotives?

Admiral STRAUSS. Yes, sir; we run by electric locomotives all through the place.

The CHAIRMAN. And you would take charge of them outside of the powder danger limit?

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. If this appropriation to improve this plant was made, how long would it take before it was completed?

Admiral STRAUSS. I think we could get the increased plant running in about two years.

Mr. BUCHANAN. The question was raised here about the kindness of the Powder Trust to the Government. Is it not a fact that the experts of the Navy have also been very considerate to the Powder Trust, giving them the benefit of what they have developed?

Admiral STRAUSS. There has been a mutual interchange, and of course the interchange takes place for the reason that we are both engaged in the same manufacture, and it is to our interest to set the manufacturers straight on any point that we may learn.

Mr. BUCHANAN. Since the Government has been experimenting with the manufacture of powder have not the Government experts given the Powder Trust about as much consideration and information as the Powder Trust has given the Government?

Admiral STRAUSS. We have always been perfectly free with any method we devise.

Mr. BUCHANAN. At what time did the Government start to manufacture powder?

Admiral STRAUSS. In 1900.

Mr. BUCHANAN. What was the cost of powder at that time?

Admiral STRAUSS. We were then paying 80 cents.

Mr. BUCHANAN. What is the present cost of powder bought from the powder company?

Admiral STRAUSS. Fifty-three cents.

Mr. BUCHANAN. What does it cost the Government to manufacture powder?

Admiral STRAUSS. It costs about 40½ cents, allowing 3 per cent interest on the capital involved in the plant and for material held in suspension for use.

The CHAIRMAN. Are there any costs outside of that not included in the 40½ cents—overhead charges?

Admiral STRAUSS. No, sir; that includes everything.

Mr. BUCHANAN. That includes everything and freight and material?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. I understood you to say that this plant, after it is completed, would not be able to provide for an emergency for some years, is that correct? Did I understand you correctly?

Admiral STRAUSS. The increased plant could well take care of our needs on the assumption that we will continue a building program such as advanced by the Navy Department this year.

Mr. BUCHANAN. You would not be able to manufacture sufficient powder then to provide for war times?

Admiral STRAUSS. The demand for war would probably require a larger output than that factory would be able to make. We have reserve powder, as stated before the committee on Monday, but a very long war, if such a thing took place, might demand a hurried production of powder.

Mr. BUCHANAN. Was there any effort on the part of this very accommodating trust to reduce the price; did they show their patriotism by reducing the price in time of war or make any other sacrifice to help the Government in time of war, when men were willing to sacrifice their lives? Was the price of powder reduced or increased during the Spanish War?

Admiral STRAUSS. We did not use smokeless powder during the Spanish War. We used brown powder and obtained it from the Du Pont Co. and the California Powder Co. They reduced the price of brown powder some time during the Spanish War as a result of the fact that their royalties to the foreign manufacturers ceased during the war.

Mr. BUCHANAN. Is there any information you can give us on that?

Admiral STRAUSS. The committee has that information.

Mr. ROBERTS. I would suggest, Mr. Chairman, for Mr. Buchanan's information, that a subcommittee of the Committee on Appropriations last year went very exhaustively into the powder cost question.

The CHAIRMAN. Last year, and we went into it the year before last.

Mr. BUCHANAN. I want to go into it now. It has been urged and I want some information at the present time. I have not taken up much time of the committee.

Mr. ROBERTS. I was only offering the suggestion. I understood that you were seeking information.

Mr. BUCHANAN. I want the information from the Admiral, who is here at the present time.

What was the amount of powder being bought at about the time the Government started to manufacture powder?

Admiral STRAUSS. In 1899, 350,000 pounds; in 1900, 695,000 pounds; in 1901, 1,401,000 pounds.

Mr. BUCHANAN. Do you not think that the price of powder has been largely reduced due to the fact that the Government commenced the manufacture of powder?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. If we had not manufactured powder the price probably would not have been decreased and would have been increased?

Admiral STRAUSS. I do not know. I see no reason why it should have been increased.

Mr. BUCHANAN. Do you see any reason why the price of oil should be increased?

Admiral STRAUSS. I did not know that it had been increased.

Mr. BUCHANAN. That is my impression. Of course, I do not insist on your giving your opinion, but I would like to know whether the Government has not paid fully for all it has ever received from the Powder Trust?

Mr. BRITTEN. I would like to ask if the powder company lost money on any contract it received from our Government?

Admiral STRAUSS. No; I do not think they have ever lost any money.

Mr. BUCHANAN. Have you any information as to the price of labor paid by the powder company and whether there is any difference in the price paid by the powder company and the Government?

Admiral STRAUSS. I think they are substantially the same. When we originally arranged our labor schedule at Indianhead, we wrote to the Du Pont Co. to get the price of labor in that vicinity, as being the nearest place where powder was being manufactured, and inquired of the other powder manufacturers, and arranged our schedule there accordingly.

Mr. BUCHANAN. Did they show you their books or did you just take their statement?

Admiral STRAUSS. We took their statement.

Mr. BUCHANAN. How about the conditions and hours of work, is there any difference in that regard? Do the Government and the powder company work the same number of hours?

Admiral STRAUSS. I think they worked longer at the Du Pont works, but I am not sure.

Mr. BUCHANAN. Is there any difference in regard to the vacation and sick leave?

Admiral STRAUSS. We give sick leave and 15 days holiday leave.

Mr. BUCHANAN. With pay?

Admiral STRAUSS. With pay.

Mr. ROBERTS. With half holiday Saturdays at Indianhead?

Admiral STRAUSS. Yes.

Mr. BUCHANAN. Have you any information in regard to the labor cost at the Government works as compared to the labor cost in the manufacture by the powder company?

Admiral STRAUSS. I am of the impression that the labor cost at the Government works is greater than at the private works.

Mr. BATHRICK. Per pound?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. And yet the Government manufactures it much cheaper than the powder company?

Mr. BUCHANAN. Cheaper than the powder company sells it. They manufacture it for about 24 cents a pound, according to my information, something like that. That is not the company's statement. Do not misunderstand me; the company's statement is that it costs them more than that.

The CHAIRMAN. Admiral, from your experience and knowledge, could the powder be manufactured at any price around 24 cents a pound?

Admiral STRAUSS. No, sir.

The CHAIRMAN. Including the cost of labor and material?

Admiral STRAUSS. No, sir.

Mr. BROWNING. You stated that it costs the Government how much?

ADMIRAL STRAUSS. 40½ cents, including 3 per cent interest on the investment.

Mr. BROWNING. In Col. Buckner's hearing, Sixty-second Congress, second session, on page 602 of the hearing, there is a statement in which he says: "In all fairness, to arrive at the actual cost of the manufacture of a pound of powder, the following items should be included," and I wish to know if they are included in your estimate, or whether they should be included. "Pensions and personal liability."

Admiral STRAUSS. Yes, sir.

Mr. BROWNING. "Stock bonuses?"

Admiral STRAUSS. No stock bonuses.

Mr. BATHRICK. What does "stock bonuses" mean?

Mr. BROWNING. I presume it is a bonus for the sale of stocks.

Mr. BATHRICK. That is, the private manufacturer?

Mr. BROWNING. That is the manufacture of powder.

"Selling expense." Of course that does not enter in, because you do not sell?

Admiral STRAUSS. No, sir.

Mr. BROWNING. "Administration?"

Admiral STRAUSS. We have an item for administration.

Mr. BROWNING. "Experimental?"

Admiral STRAUSS. We spend a certain amount on experimental work in the laboratory, which is charged as a laboratory expense to the whole cost. We have not a separate experimental station.

Mr. BROWNING. "Idle mills?"

Admiral STRAUSS. We have no idle mills.

Mr. BUCHANAN. There is a cost for experimental work?

Admiral STRAUSS. There is some work done in experimentation, and that is charged to the cost of the powder.

Mr. BROWNING. "Taxes?"

Admiral STRAUSS. No taxes.

Mr. BROWNING. Col. Buckner claims that those items should be included in the actual price of a pound of powder manufactured by the Government.

Mr. STEPHENS. Col. Buckner, to whom you refer, represented whom?

Mr. BROWNING. The Du Pont Co. He had a very exhaustive hearing on this subject before the committee.

Mr. BUCHANAN. Do you figure any cost an investment?

Admiral STRAUSS. Yes, sir; we charge for our investment 3 per cent. I believe the Du Pont Co. charges 5 per cent.

Mr. WITHERSPOON. Admiral with regard to this estimate of \$750,000 to extend the plant at Indianhead, it has been suggested heretofore that it would be a great advantage to the Government to have another plant on account of the possibility of accident and the destruction of one. Have you considered that question, whether it would be better to enlarge this plant or have a separate one that would not be affected by any accident to this one?

Admiral STRAUSS. Yes; I have thought of that, not only in connection with the powder works but in connection with any other manufacture that we undertake. It would be more costly to manufacture in two places, of course. The danger of the plant at Indianhead being destroyed is one that can only come from war. The buildings are all separated enough to make the fire loss an unimportant one so far as the operation of the plant is concerned. It is situated on the water so that we have water transportation, and I can not conceive of anything that would occur to interrupt the communication between the plant and the place where the powder is needed.

Mr. WITHERSPOON. You do not consider, then, that the destruction of the plant is within any reasonable probability?

Admiral STRAUSS. No, sir; I do not think it is probable.

Mr. WITHERSPOON. You spoke of its costing more to have two plants. Have you gone into that sufficiently to give us any approximate idea of how much it would increase the cost to have two separate plants?

Admiral STRAUSS. No, sir; I have not.

Mr. WITHERSPOON. It would double the overhead charges?

Admiral STRAUSS. Not double them, but increase them. The supervision would have to be doubled. If you increase the output of any building, as a rule it can be done at less than the rate of the increased production.

Mr. WITHERSPOON. If you had two plants, you would have to have two power plants, would you not?

Admiral STRAUSS. You would have to have two power plants, two general managers, two laboratories, and entirely different organizations, and a highly paid head to each. You can see in that way the costs are bound to increase if you have two plants.

Mr. WITHERSPOON. And increase largely, necessarily?

Admiral STRAUSS. They would be increased considerably.

Mr. WITHERSPOON. A considerable increase?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. The increase of the amount of powder manufactured at the same plant serves to reduce the cost?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. The overhead charges are no more?

Admiral STRAUSS. The overhead charges are not increased proportionately.

Mr. BUCHANAN. And that would tend to reduce the cost of the powder per pound?

Admiral STRAUSS. Yes.

Mr. WITHERSPOON. About the general necessity of this enlargement, I understood you to say that it was necessary on the assumption

that the building program contained in this bill would be carried out this year and in subsequent years?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. And if that building program is not adopted, then, as I understand you, this enlargement is not necessary. Is that so?

Admiral STRAUSS. If we do not build any more ships the powder factory we have at present would be sufficient.

Mr. WITHERSPOON. How much powder do we use every year in target practice?

Admiral STRAUSS. We use in target practice and at the proving ground about 1,650,000 pounds.

Mr. WITHERSPOON. Every year?

Admiral STRAUSS. Yes.

Mr. WITHERSPOON. And we manufacture how much?

Admiral STRAUSS. We will manufacture in the present year 2,500,000 pounds of powder.

Mr. WITHERSPOON. That is 900,000 pounds that we manufacture more than we use a year?

Admiral STRAUSS. Yes.

Mr. WITHERSPOON. Without taking into consideration any proposed increase in the Navy we have capacity now to increase our reserve of powder 900,000 pounds a year?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Admiral, as a man of long experience and an admiral in the Navy, can you conceive of a naval battle that would exhaust the supply of ammunition you have just described to Judge Witherspoon?

Admiral STRAUSS. That subject has received the most careful consideration on the part of the General Board, a board of very experienced officers, who have gone into it thoroughly, and they have determined that the probable needs would be this amount, and it is an opinion that I should hesitate to question.

Mr. WITHERSPOON. The possible needs?

Admiral STRAUSS. The possible needs; yes, sir.

Mr. HENSLEY. You are stating the opinion of the General Board. You do not care to venture an opinion as against that. I would very much appreciate a suggestion on that point. In that connection I would like to ask you whether or not in all history there has been any naval engagement—battle—that has consumed anything like the amount of ammunition which you have spoken of as being carried?

Admiral STRAUSS. There might not in one engagement.

Mr. HENSLEY. In any engagement between two warring forces?

Admiral STRAUSS. I think it is conceivable.

Mr. HENSLEY. Has there been an instance in history where that amount or anything which will approach that amount has been consumed?

Admiral STRAUSS. I think we need a supply of ammunition to the extent indicated. We can only gauge our probable needs on careful study. The weapons have changed. The rate of fire has changed. All these things make it difficult for us to argue from the past.

Mr. HENSLEY. Aeroplanes, submarines, and all of those things enter into it now as never before?

Admiral STRAUSS. Sixty years ago ships were not armored, and you can not go very far back into naval history in order to get an idea of what you need for the future.

Mr. WILLIAMS. What is the maximum annual capacity for the production of powder with your present facilities?

Admiral STRAUSS. We expect to produce 2,500,000 of new powder at Indian Head next year and rework about 500,000 pounds.

Mr. WILLIAMS. Is that the maximum capacity?

Admiral STRAUSS. That is the maximum. The plant is always worked at the maximum.

Mr. WILLIAMS. Does the powder deteriorate through age?

Admiral STRAUSS. Yes, sir.

Mr. WILLIAMS. Very materially?

Admiral STRAUSS. In the past powder did deteriorate rapidly; that is, in about six years it had become unstable enough to require reworking, but we have recently adopted means by which that period is lengthened to 12 or 15 years.

Mr. WILLIAMS. Do you use the old powder in practice and reserve the new powder?

Admiral STRAUSS. We do that as much as possible, fire the older powder and keep the new powder.

Mr. WILLIAMS. Eventually this reserve powder will become useless unless there should be war?

Admiral STRAUSS. Not useless; we rework it. We take powder that we know is unstable and at a cost of about 13½ cents a pound make it into new powder.

Mr. WILLIAMS. Do you aim to keep any deteriorated powder in your reserve?

Admiral STRAUSS. No, sir.

Mr. WILLIAMS. You avoid that?

Admiral STRAUSS. We do not have any deteriorated powder. We rework the powder when it gives any sign of instability whatever.

Mr. BUCHANAN. Is the department recommending an appropriation for the purchase of powder?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. Why is that, if they manufacture all the powder they need and more?

Admiral STRAUSS. We can not manufacture enough powder.

Mr. BUCHANAN. I misunderstood you. What is the amount of powder used?

Admiral STRAUSS. We use for target practice and for proof work 1,650,000 pounds, but we have ships building that will require 14-inch powder. We have six of those ships altogether and four of them are on the stocks, which will require a large supply of 14-inch powder. These ships will be coming in in two or three years and we must be prepared to furnish them with this new powder.

Mr. BUCHANAN. How much is the whole amount used now?

Admiral STRAUSS. 1,650,000 pounds per annum.

Mr. BUCHANAN. And your capacity for manufacture is 2,000,000 pounds?

Admiral STRAUSS. 2,500,000 pounds.

Mr. BUCHANAN. And still it is necessary to purchase powder?

Admiral STRAUSS. Yes, sir; our needs are made up of powder used and powder required for new construction.

Mr. BATHRICK. What are the needs per year? You are making 2,500,000 pounds.

Admiral STRAUSS. Last year we made a little less than half the quantity we needed. Eventually we will not have to manufacture or buy so much powder, because as the powder becomes old and the number of ships in existence becomes fixed we will rework the older powder, and the annual charge for powder will possibly be reduced to the cost of reworking at $13\frac{1}{4}$ cents, plus the amount annually expended.

Mr. BATHRICK. Eventually your factory will be resolved into a reworking plant?

Admiral STRAUSS. Yes, sir; very largely, except for the annual consumption.

Mr. BATHRICK. Will there be so much additional expense for machinery and equipment then?

Admiral STRAUSS. That will be a long time in the future.

Mr. WILLIAMS. When you add the cost of reworking to the original cost, it does not cost the Government as much as to buy the powder from the powder companies?

Admiral STRAUSS. We take powder that would otherwise be valueless and rework it at a cost of $13\frac{1}{4}$ cents.

Mr. WILLIAMS. Which added to the 40 cents makes it as cheap as you can buy it?

Admiral STRAUSS. Forty cents is the cost now.

Mr. WILLIAMS. And $13\frac{1}{4}$ cents the cost for reworking?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. There is a loss of 10 per cent in reworking.

Mr. WILLIAMS. The reworked powder does cost more when added to the original cost?

Admiral STRAUSS. Yes, sir. You can not take the original cost as the value of this material, because without reworking it would have no value.

Mr. STEPHENS. Admiral, what kind of powder is used in the firing of sunset and sunrise guns at the navy yards?

Admiral STRAUSS. We do not fire them any longer.

The CHAIRMAN. This whole project which you have submitted to the committee for the extension of the powder factory, embracing some new construction, separate buildings, and the enlargement and extension of existing buildings and the extension of tracks and trolley lines and wells, is part of a whole project to enlarge the existing powder factory?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. And they are simply component parts of an enlargement and extension of the powder factory?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Consisting of these integral parts which make up the whole of the enlargement?

Admiral STRAUSS. Yes, sir; that is correct.

Mr. HENSLEY. You gave us the cost to the Government of manufacturing powder as against the price that we pay the Du Pont Powder Co., and in connection with your answers you stated that they worked

longer hours in the private concern and that the Government employees got certain holidays or days off with pay. I would like to get from you, if I can, an idea as to how much cheaper you could manufacture the powder if you worked the men the same hours that the private concern does and did not give them the days off which you have mentioned—employed the same methods in the Government works that are employed in the private concern—that is, how much cheaper? It seems to me that it should be much cheaper than the forty and a fraction cents a pound.

Admiral STRAUSS. The private manufacturers do not allow leave and holiday pay to the general force employed. I am informed that the supervisory force and men of higher ratings are allowed two weeks with pay. We are not able to ascertain the rate of pay given these people, and it is therefore impossible to answer the last question with any degree of exactness.

The CHAIRMAN. Under the existing law all powder that is purchased has to be made under the eight-hour law?

Admiral STRAUSS. Yes, sir.

(Thereupon the committee adjourned to meet on Monday, January 26, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Monday, January 26, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL JOSEPH STRAUSS, CHIEF
BUREAU OF ORDNANCE—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Strauss.

Mr. BROWNING. Mr. Chairman, you asked the Admiral on Friday, if I remember aright, if the extension at Indianhead was not a part of the general plan. Is that correct?

The CHAIRMAN. I asked him if the proposal submitted for this \$750,000, with an appropriation carried here of \$500,000, and the proposal embracing some new buildings and the enlargement and extension of other buildings, the purchase of machinery and the extension of railroad tracks and overhead wires—if all of that constituted a plan to enlarge the factory and equip it in order to increase the output of the manufacture of powder, and he answered that it was.

Mr. BROWNING. Under this plan, if I remember correctly, his answers, as I stood alongside of him when he was pointing out the different buildings on the map, that in only one or two instances were they extensions to the present buildings, and that all of the buildings, and necessarily so in my opinion in a plant of that kind, would be new buildings.

Admiral STRAUSS. One of the buildings, the dehydrating house, does not require any extension, nor does a new building have to be built. We have 13 dry houses there now. We will need 10 more. These dry houses are added from time to time in the same manner that machinery equipment would be added as the needs increase.

The CHAIRMAN. In the construction of dry houses, do you ever join them together, or are they always built separate and apart?

Admiral STRAUSS. The dry houses are always separate. We began with four and gradually increased the number to 13, and if we increase the output as designed there will be 23.

Mr. BROWNING. You said that only one building, as I remember, would have an extension, and that the others would be new buildings. There may have been two buildings, but I think only one.

Mr. WITHERSPOON. What is the difference between a dry house and a magazine?

Admiral STRAUSS. A dry house is heated up to a temperature of about 100° F., and the powder kept in there for the purpose of getting rid of the residual solvent, alcohol, and ether. That finally reaches a point where no more evaporates, and then the powder becomes available for use and is stored in a magazine or sent to the ships.

Mr. WITHERSPOON. Magazines are used for storing the powder after it is put in proper condition?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. And the dry houses are used to put it in proper condition?

Admiral STRAUSS. That is correct. The pulping house, one of the most important buildings, is to be increased in size. The ether house is to be increased in size. As I said, the dehydrating house is not to be increased at all.

Mr. BROWNING. Those are the two buildings I had in mind.

Admiral STRAUSS. The alcohol storage building is to be extended. The mixing house building is to be extended and the press house building is to be extended.

Mr. BROWNING. What do you mean by "extended," an addition to the same building?

Admiral STRAUSS. Yes, sir; the building lengthened.

I would like to say, if I may, that the final project calls for the expenditure of \$780,000. We only ask for \$500,000 this year. If the balance, \$280,000, is to be cut down by not building the wharf, we simply defer any consideration of the wharf until the railroad question is settled. That is, the appropriation now asked for would not necessarily include this wharf and some other things to the extent of \$280,000.

Mr. BRITTEN. The department is asking for \$750,000 this year?

The CHAIRMAN. No, sir; \$500,000 is asked for this year?

Mr. BRITTEN. The sum total is \$750,000?

The CHAIRMAN. That includes \$50,000 for additional facilities, \$200,000 for the enlargement of the proving grounds, and \$500,000 for the extension of the powder factory. There are three items embraced in the total of \$750,000.

Mr. BRITTEN. In which of the three items is the \$100,000 for the stone wharf?

The CHAIRMAN. It is in the \$500,000 item for the extension of the powder factory. The other has no connection with the extension of the powder factory; it is for the extension of the proving grounds, for firing range practice, etc.

Mr. BRITTEN. It is understood, then, Mr. Chairman, that we will not be expected to take final action on the estimate which applies to

the wharf until we know what disposition will be made of the railroad question?

The CHAIRMAN. That is what has been stated; yes, sir.

Admiral, I would like to call your attention to the statement of Admiral Twining in the hearings of 1912 on page 87. Mr. Loud asked this question:

What is the highest record up to the present time of any gun you have had in the service; a 12-inch gun?

Admiral TWINING. We have fired several 200 rounds. From one gun we have fired about 480 rounds; it was still accurate at the four hundred and eightieth round.

I would like you to put into the record a statement relative to that statement in comparison with the statement you made about 175 rounds.

Admiral STRAUSS. The 480 rounds included all rounds fired from that gun, many of which were reduced charges, for instance, for armor tests, where the charge is very much reduced—and for other purposes. When we say that a gun will fire 175 rounds, that means 175 rounds full charge. A charge that is reduced to three-quarters of the weight of the powder only erodes the gun one-quarter as much as a full charge, so that we can fire many more rounds with reduced charges than with full charges.

Mr. STEPHENS. A full charge is a battle charge?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. I do not understand why you reduce the charge when you are testing a gun on armor plate.

The CHAIRMAN. The range is shorter.

Admiral STRAUSS. We test the armor plate at a distance of 100 yards from the gun, and we simulate the range by reducing the velocity so as to accord with what is desired for the test.

Mr. WITHERSPOON. Do you mean that a charge of three-quarters fired 100 yards would have the same effect as a full charge fired seven miles?

Admiral STRAUSS. Those figures are not exact.

Mr. WITHERSPOON. I mean, is that the idea, approximately?

Admiral STRAUSS. The idea is to attack the plate with a certain velocity, the highest velocity that the best modern armor will stand, and we arrange the charge to give that velocity.

The CHAIRMAN. Admiral, I would like to call your attention to an item which appears in the Washington Herald of this morning, January 26, 1914. On page 1 it says:

Naval scandal now being investigated. Officers said to have been in collusion with manufacturers of armor plate. Inferior grade furnished.

I will ask you if you have seen that item?

Admiral STRAUSS. Yes, sir; my attention was called to the item this morning.

The CHAIRMAN. Is there any truth in the statement or any foundation for the statement?

Admiral STRAUSS. No, sir. I think we get as good armor as any country in the world. I think we get the best armor. Our armor manufacturers have secured several contracts abroad in competition with Krupp, who was the originator of the present armor.

Mr. WITHERSPOON. Do you not test all of the armor?

Admiral STRAUSS. Yes, sir; all lots of armor are given a rigid test. The tests are usually witnessed by many people and I have never

seen anybody who had any business at the proving ground refused a chance to come there and see the tests. A clause of the contract reads as follows:

Persons not connected with the Navy Department of the United States or with the contractors making the plates, shall not be allowed to be present at ballistic tests except by consent of the Bureau of Ordnance and the contractors.

This clause has been construed most liberally by both parties.

Mr. WITHERSPOON. It would be impossible for any naval officers to enter into such a scheme effectually unless the Chief of Ordnance was in it, and would you find it out by your tests if they should furnish inferior armor?

Admiral STRAUSS. I think such collusion as is spoken of in that article is an impossibility.

The CHAIRMAN. Admiral, is there any foundation for the statement in the item that the ships are equipped with inferior armor?

Admiral STRAUSS. No, sir; none at all.

Mr. BUCHANAN. Some years ago some affidavits were made by men who worked in the mills to the effect that it was not properly inspected in the mills and that it was inferior armor?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. I have thought that that matter ought to be investigated?

Admiral STRAUSS. That was investigated.

Mr. BUCHANAN. What was the result of the investigation?

Admiral STRAUSS. That occurred about 20 years ago and full reports were made on it at the time, and the offending firm was punished and brought to book. Since that I have never heard of any.

Mr. BUCHANAN. It was since that, I think, that these affidavits I had in mind were made. I think Congressman Rainey put some in the record, if I remember rightly, I should say five or six years ago.

Admiral STRAUSS. I did not know about that.

Mr. BUCHANAN. Have you that in mind, Mr. Chairman?

The CHAIRMAN. I remember several years ago there was something said about some defective armor with reference to a couple of ships. We asked Admiral Twining about it two or three years ago and he said that there had been what often happens with some particular piece of armor, that it will spall; that is, where it is hardened—in the contracting of the armor there is uneven contraction and there may be a spalling off of a piece of the superhardened outside of the armor, due to the uneven contraction of the metal. He said there had been a case on two of the ships—I do not recall their names—the *Wyoming* and *Delaware*, it is suggested to me; that those two plates had been taken off by the party and that the spalling took place within the test period.

Mr. WITHERSPOON. I remember that testimony.

The CHAIRMAN. They have a test period of six months that the armor has to go through, and the spalling, if it takes effect at all, takes effect within that period of six months, and this did take place within the six months.

Mr. HENSLEY. Is there any investigation on foot by the Senate committee inquiring into matters of this kind?

The CHAIRMAN. I have heard of none. Do you know of any investigation or anything of that kind?

Admiral STRAUSS. I have heard of none.

Mr. BATHRICK. Can you increase the cavity so that you can put in a larger charge of explosive and still retain the same armor-piercing power?

Admiral STRAUSS. No, sir.

Mr. BATHRICK. You have reached the limit in that cavity?

Admiral STRAUSS. We have reached the limit. As a matter of fact, we are reducing the cavity a little. If our shells strike an unarmored portion of the ship they explode with tremendous damage to everything in the neighborhood. Taking the bursts as we experiment with them at the proving grounds, we find that the shell is divided into a great number of pieces—I am speaking of the armor-piercing shell—and would do great damage. I doubt if the charge of the explosive were greater that the damage would be much greater.

Mr. BATHRICK. By reducing the amount of the explosive you get a more certain penetrating power?

Admiral STRAUSS. That is the idea.

Mr. WITHERSPOON. What is the reason that you can not make the cavity in the shell a little smaller and extend it nearer to the point, thereby holding the same amount of explosive and distributing the weakness of the shell over a larger area?

Admiral STRAUSS. Recently we have improved our armor-piercing shell in design by making the head solid down to the largest diameter called the bourrelet, and to attempt to increase the cavity in the direction you suggest, I think, would be unsuccessful. We have had a sufficient number of experiments—

The CHAIRMAN (interposing). It causes the shell to wobble?

Admiral STRAUSS. The shell would be more readily crushed at the head, where the greatest work is demanded of it—that is, as it pierces the armor.

The CHAIRMAN. One officer said to me that if you run the cavity too far forward it would make the end of the shell too light and it would cause the shell to go unevenly through the air.

Admiral STRAUSS. We have to be careful where the center of gravity of the whole shell is.

Mr. BUCHANAN. You said that it would be impossible for collusion to exist between the officers and the Steel Trust. Would it be possible for them to deceive the officers?

Admiral STRAUSS. We have competent inspectors at their works. They pick out the plates to be tested and stamp them.

Mr. BUCHANAN. Who do you consider a competent inspector—a man of technical education or a practical man who understands the manufacture?

Admiral STRAUSS. We have both; we have officers who have made a study of the question of inspecting armor and they are assisted by practical men who have had large experience at it.

Mr. BUCHANAN. Men who have seen the material manufactured?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. There has been a good deal said, and no doubt true, about the abnormally high price of armor plate to the Government and that the steel companies have charged the Government much more than they have charged foreign countries. Can it be possible for there to be any collusion on the part of the officers and Steel Trust in regard to that?

Admiral STRAUSS. I do not see how.

Mr. BUCHANAN. You do not think it would be possible?

Admiral STRAUSS. No, sir.

Mr. HENSLEY. I notice occasionally that young officers are permitted to resign from the Navy. Have you any instances in mind where the young men are employed by the big steel concerns of the country?

Admiral STRAUSS. The Bethlehem Co. employ E. O. Ocher, an assistant engineer, who resigned December 31, 1889. They also employ three young officers who resigned two or three years ago.

Mr. BUCHANAN. Can you account for why the department or the Government has not undertaken to protect themselves against the enormous price they have been required to pay for armor plate? Under an investigation made some time ago it was found that armor plate could be manufactured for about \$180 a ton, was it not?

Admiral STRAUSS. I have some estimates in the files of the bureau which I can put in the record. We submit these proposals to public competition, competitive bidding, and under the law have to take the lowest bid.

Mr. BUCHANAN. It has been clearly demonstrated recently that there has been no competition, that the bids were practically the same?

Admiral STRAUSS. The bids seemed to be practically identical.

Mr. BUCHANAN. In fact, there has been no competition for years. The companies have been in collusion with each other for the purpose of charging an extortionate price, and the department has been aware of it, without making any effort to protect the Government against the extortionate price. Has there been any action on the part of the department? I notice that the present Secretary has recommended that an appropriation be made to establish a plant to manufacture armor. Has any other Secretary ever recommended such a plant for the protection of the Government.

Admiral STRAUSS. Secretary Herbert, under date of January 5, 1897, recommended to Congress that an armor-plate factory be established, and a naval appropriation act, approved June 7, 1900, actually appropriated the sum of \$4,000,000 for the purpose of establishing a Government armor-plate factory.

Mr. HENSLEY. For what length of time, would you say, have these bids which come in from the different great steel concerns been identical? For how many years back would you say that situation has obtained?

Admiral STRAUSS. They have been practically identical for some years back.

Mr. HENSLEY. Has the Navy Department ever called the attention of the legislative body to that fact?

Admiral STRAUSS. There has been a great mass of information concerning the price of armor, the bids, and everything furnished to Congress.

Mr. HENSLEY. Has any protest been made by the department against being compelled to accept these competitive bids which were not competitive, as you have stated?

Admiral STRAUSS. I do not know that it has been put in the form of a protest, but data has been furnished Congress looking to the building of an armor plant, I think, on several occasions.

Mr. HENSLEY. The price of armor plate per ton is now much less than heretofore?

Admiral STRAUSS. Our last contract was made for Class A armor at \$440 a ton.

Mr. HENSLEY. Your last contract?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Under the contract made previous to that, what was the price?

Admiral STRAUSS. Previous to that it was \$454. The previous contract to that was made before the eight-hour law came into effect, at \$420, and they raised the price of armor on account of that law to \$454 a ton, and Secretary Daniels made them come down to \$440 a ton, a reduction of \$14 per ton. That is the history of the recent purchase of armor.

Mr. BATHRICK. Is that the last purchase?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Is that all the reduction which the department has been able to bring about?

Admiral STRAUSS. Yes, sir.

Mr. BATHRICK. Did you ever contract for any foreign armor?

Admiral STRAUSS. We asked the Krupp Co. for tenders on the last contract and they declined to bid, but stated that they would bid on future contracts.

Mr. BROWNING. It has been suggested that our manufacturers sold armor abroad cheaper than they did here.

Admiral STRAUSS. I understand so.

Mr. BROWNING. Is that true?

Admiral STRAUSS. I believe it to be true.

Mr. BROWNING. I have heard that armor the world over was practically one price. As you say, the bids from abroad were higher?

Admiral STRAUSS. Such indications as we have show that armor is sold at a higher price by foreign manufacturers. The Carnegie Steel Co. sold armor to the Italian Government in 1911 at \$411 per metric ton, and in the same year obtained the second contract with the Italian Government for armor at the rate of \$397.35 per United States ton. In 1894 the Bethlehem Iron Co. made a contract with the Russian Government for 1,500 tons of armor at a very greatly less price than was then charged this Government. Complete statement concerning this award is given in Document 193, House of Representatives, Fifty-ninth Congress, second session.

Mr. BUCHANAN. For that matter, if the facts were developed you would find that there is a gentlemen's agreement with the European manufacturers and the American Steel Trust. It has been discovered that there was such collusion in Germany, France, and England, I believe.

Mr. STEPHENS. You say that the price per ton for the last contract was \$440?

Admiral STRAUSS. Yes, sir.

Mr. STEPHENS. And prior to that the contract price was \$454?

Admiral STRAUSS. Class A was sold at \$454 on the previous contract.

Mr. STEPHENS. Had the department paid any higher price than that previous to the \$420 price?

Admiral STRAUSS. Yes, sir.

Mr STEPHENS. How much higher?

Admiral STRAUSS. Away back, at the beginning of the manufacture of armor, we paid over \$600 a ton for armor.

Mr. STEPHENS. Did you pay more than \$420 for the contract previous to the \$454 contract referred to?

Admiral STRAUSS. I will secure the history of armor-plate prices and put it in the record.

(The statement is as follows:)

Cost per ton to Government:		Cost per ton to Government—Con.	
1887.....	\$615. 24	1905.....	\$420. 00
1890.....	599. 04	1905.....	398. 00
1893.....	657. 93	1906.....	346. 00
1896.....	590. 12	1907.....	420. 00
1898.....	410. 52	1908.....	420. 00
1899.....	410. 25	1909.....	420. 00
1900.....	420. 00	1910.....	420. 00
1903.....	420. 00	1911.....	420. 00
1903.....	398. 00	1913.....	454. 00
1904.....	420. 00	1913.....	440. 00

The CHAIRMAN. I will state to the committee that in Mr. Roosevelt's administration competitive bids were asked for and were submitted. It was about the time that the Midvale Co. began the manufacture of armor plate, and they did submit competitive bids, and as I now remember something like 30 per cent less than the other bids. When that was done Mr. Roosevelt submitted a proposition to the other two companies, the Carnegie and Bethlehem Cos., if they would reduce their price to the same bid as offered by the Midvale people, saying that if the whole contract were given to one concern the other two companies would have nothing to do and would go out of business, and it was to the interest of the Government that there should be more than one factory. Thereupon they did reduce their bids, and agreed to take the same price as the Midvale Co., and he divided the contract between the three concerns, and following that it was not hard for the three concerns to avoid any embarrassment of that kind, and thereafter they have always submitted identical bids as nearly as possible.

Mr. BROWNING. Do you remember the price of the Midvale bid at that time?

The CHAIRMAN. I do not remember the exact price. As I remember, it was something like 30 per cent less than the bids by the Carnegie and Bethlehem Cos.

Mr. BUCHANAN. Has not the Government paid as high as \$600 in the last 15 years for armor plate?

Admiral STRAUSS. No, sir.

Mr. BUCHANAN. Did they not increase the price during the Spanish-American War?

Admiral STRAUSS. No.

Mr. BUCHANAN. The trusts are usually patriotic for profit in time of emergency.

Mr. BATHRICK. Was it not recently announced in the public press that the Secretary of the Navy had succeeded in getting a very low price on armor plate from some foreign concern?

Admiral STRAUSS. It may have been.

Mr. BRITTEN. That was in connection with some English turbines and machinery. It is my impression that the Navy Department is in possession of certain figures that were made in a contract between the United States manufacturers of armor plate and, I think, the Government of Russia about a year ago that was materially less than \$440 a ton. If that information is in the possession of the Navy Department and can consistently be put in the record, I would like to have that done.

Admiral STRAUSS. The Russian Government contracted with the Bethlehem Iron Co. in 1894 for 1,500 tons of nickel steel armor, at the rate of \$249 a ton; a statement in regard to this contract will be found on page 20, House Document 193, Fifty-ninth Congress, second session.

Mr. BRITTEN. Also in that connection I would like to know if there is anything in this bill looking toward the establishment of an armor-making plant?

Admiral STRAUSS. There is nothing in this bill. The Secretary, in his annual report, has recommended the construction of an armor plant.

Mr. BRITTEN. Along the line of the figures which you are going to insert in the record, I would like also to have such estimates as have been made from time to time by the department regarding the prospective cost of armor if manufactured by the Government.

Admiral STRAUSS. I have an estimate right here.

Mr. BRITTEN. If it is agreeable to my colleagues on the committee I would like to have that inserted in the record.

Admiral STRAUSS. I will do it now.

An armor plate factory of 20,000 tons capacity with an output per year up to its full capacity—

Mr. BRITTEN (interposing). How many tons of armor will we require under a two-battleship program?

Admiral STRAUSS. Sixteen thousand tons. An armor-plate factory of 20,000 tons capacity, with an output per year up to its full capacity, can produce armor at a cost of \$279 per ton. If it worked half capacity the estimate is \$349 a ton, and if the output were 5,000 tons the estimated cost is \$400 a ton. If we build an armor-plate factory with a capacity of 10,000 tons, and work it to full capacity—

Mr. BROWNING. Twenty-four hours a day, do you mean, by full capacity?

Admiral STRAUSS. Yes, sir. The cost is estimated at \$314 a ton and at half capacity, that is 5,000 tons, \$394 a ton. If we build a 5,000-ton plant and work it to full capacity, that is 5,000 tons per annum, the cost is estimated at \$354. The cost of building 20,000, 10,000, and 5,000 ton plants are, respectively, \$11,288,431—

The CHAIRMAN (interposing). For which?

Admiral STRAUSS. The 20,000-ton plant.

Mr. LEE. Is that for the purchase of ground and the factory complete?

Admiral STRAUSS. Everything. The cost of an armor plant of 10,000-ton capacity is estimated to be \$8,466,000, and of 5,000-ton capacity, \$6,300,000.

Mr. BROWNING. How many acres of ground would it take to build an armor-plate factory?

Admiral STRAUSS. The largest plant is estimated to require 80 acres.

Mr. BROWNING. And for the 10,000-ton plant?

Admiral STRAUSS. It would not be much less than 80 acres. Eighty acres, in round numbers, is the acreage required for an armor plant.

Mr. ROBERTS. How many men would be employed in these three plants, if running to their capacity?

Admiral STRAUSS. The number of employees for the 20,000-ton plant is estimated to be 1,612 men.

Mr. ROBERTS. Would the smaller plant take a proportionately smaller number of men?

Admiral STRAUSS. Not proportionally.

Mr. ROBERTS. I am speaking about the total number of men. Could you produce 10,000 tons of armor with 806 men?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. The number of men would not decrease in proportion to the output?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. You spoke of the price per ton running at various capacities of these several plants. Have you in that report an itemized statement of what you figure in to get the cost per ton?

Admiral STRAUSS. Yes, sir; that is all itemized.

Mr. ROBERTS. In these plants which you are suggesting do you provide for military control or are they purely manufacturing plants with civilian employees and civilian managers?

Admiral STRAUSS. The principal employees of this plant would have to be experts gotten from civil life and some of them would require very high salaries.

Mr. ROBERTS. What is the highest salary which you are figuring on?

Admiral STRAUSS. The general manager of that plant should get \$20,000 a year, I figure.

Mr. ROBERTS. Can you get a competent man for that salary?

Admiral STRAUSS. Yes, sir; I think so.

Mr. ROBERTS. Do you know what the private plants are paying for similar services?

Admiral STRAUSS. We have no information.

Mr. BUCHANAN. How do you get the information which you base your estimates on?

Admiral STRAUSS. The estimates are made from data collected by our inspectors at the different plants.

Mr. BUCHANAN. From the steel plants?

Admiral STRAUSS. From the naval officers inspecting at all these different plants now and in years past, and they tell us the machinery that is used and what is necessary and we have inquired from the manufacturers of such machinery what they will furnish it for.

Mr. BUCHANAN. I am speaking about the cost of armor.

Admiral STRAUSS. The cost of the product is estimated by these inspectors. It is carefully collated. It is about the best we can do. I want to say this, that in my opinion it is impossible to furnish a close estimate of the cost of any manufactured article unless you go into the business of manufacturing yourself.

Mr. ROBERTS. Depreciation of these plants is pretty rapid, is it not?

Admiral STRAUSS. It is all allowed for in these estimates of cost?

Mr. ROBERTS. What per cent have you estimated?

Admiral STRAUSS. We estimate that one of these plants depreciates to zero value in about 16 years.

Mr. BRITTEN. I would like to ask, if this committee and Congress should decide on an appropriation for an armor-making plant, would it be possible, in your opinion, to proceed on the basis of a plant for 5,000 tons per annum, with a view to increasing that particular plant to 10,000 tons, and then to 20,000 tons?

Admiral STRAUSS. That could be done; yes, sir.

The CHAIRMAN. At what relative cost?

Admiral STRAUSS. It would cost more to improve a 5,000-ton plant to a 10,000-ton plant than to build a 10,000-ton plant at the outset.

The CHAIRMAN. About how much more?

Admiral STRAUSS. I can not give you the exact figures.

The CHAIRMAN. You are quoting from a communication sent to the Secretary of the Navy relative to the establishment of an armor plant. Can you insert that in the hearings?

Admiral STRAUSS. Yes, sir; I can insert the full report.

(The communication referred to is as follows:)

REPORT OF BUREAU OF ORDNANCE ON COST OF GOVERNMENT ARMOR FACTORY.

DEPARTMENT OF THE NAVY,
BUREAU OF ORDNANCE,
June 28, 1918.

To: Navy Department (material).

Subject: Armor plate, cost of; and probable cost of Government factory for armor plate.

References.—(a) Navy Department letter No. 4174-157, April 10, 1913; (b) Senate resolution No. 93 (Senator Tillman), May 27, 1913.

Inclosures herewith.—(A) Proposed layout of factory, annual capacity 20,000 tons of armor and 5,000 tons of gun forgings; (B) summary of estimated cost of plant; (C) detailed cost of armor plant and gun-forging plant; (D) detailed statement of cost of manufacture of armor at existing armor plants; (E) detailed estimate of cost of armor manufactured in a Government plant.

1. In compliance with directions contained in department's letter (reference a), the bureau has made a preliminary study of the proposition to establish a Government plant for the manufacture of armor plate and submits this report, with inclosures, which embody the results of its study.

2. Answering specifically the points covered in the department's letter (reference a) and the Senate resolution (reference b), the bureau states as follows:

(a) The cost of a Government armor plant has been estimated on the basis of three different capacities for annual output of armor. They are as follows:

20,000 tons.....	\$11,288,431
10,000 tons.....	8,466,000
5,000 tons.....	6,300,000

(b) The time required for the building of such a plant depends somewhat upon the capacity of the plant and is estimated as follows:

20,000 tons, 3 years 6 months;
10,000 tons, 3 years;
5,000 tons, 3 years;

the time in each case being estimated from the date of the passage of an act of Congress authorizing the erection of a plant and appropriating necessary funds to initiate the project.

(c) The probable cost per ton of K. C. class A armor produced by a Government plant varies with the capacity of the plant and its output. The estimated costs per

ton of armor turned out under several assumed conditions are herewith tabulated for convenience of reference; they include production costs and administrative charges:

Capacity (output).	20,000 tons.	10,000 tons.	5,000 tons.
20,000	\$379	\$349	\$400
10,000	-----	314	394
5,000	-----	-----	354

(d) The estimated cost of manufacturing the best armor plate per ton (Senate resolution) is \$269. This is the estimated cost at a well-equipped private plant and includes all elements of cost except interest on investment. If the latter is considered to be a legitimate charge on the cost of armor plate, the sum of \$49 should be added to the foregoing, making a total cost of \$318 per ton.

(e) The cost of erecting and equipping a plant for use by the Government in manufacturing armor and gun forgings (Senate resolution) would be as stated under (a) above, with the addition of \$3,673,780.

(f) There are no secret or patented processes used in the manufacture of the best class A armor in the United States at present. Special-treatment steel, which is used for armor of 5 inches thick and less, commonly known as class B armor, is made under patents covering the special treatment. The patents covering the process used by the Carnegie Steel Co. are owned by Mr. S. S. Wales, of that company. A similar product is manufactured by the Carbon Steel Co., but it is not known whether or not the process is covered by a patent.

(g) The length of time required by the Government to build and equip an armor plant "adequate for the needs of the Navy" is as stated under (b) above. The question as to what capacity the plant should have to make it "adequate for the needs of the Navy" will be discussed later.

COMMENT ON THE PROPOSITION TO ESTABLISH A GOVERNMENT ARMOR FACTORY.

3. The bureau understands, from the discussion of this question that has taken place from time to time in Congress, that the idea of establishing a Government armor-plate factory arose primarily from the belief that such procedure would have the effect of reducing prices for armor bid by private concerns, this end to be accomplished in two ways:

First. By giving the Government a very clear idea of the actual cost of production of armor, and

Second. By placing the Government in the field as a competitor with the private manufacturers.

4. It has been very generally believed that, in recent years at least, there has been no actual and real competition in the matter of prices among the three armor manufacturers and that therefore the Government is obliged to pay a price considerably in excess of a fair price for its armor.

5. The same situation has existed in certain foreign countries, and it is presumably for this reason that some of these countries, notably France and Russia, have established Government armor-plate factories. Whether the result of the establishment of these factories has been to reduce the prices charged by private contractors is open to question. It would appear, from available information, that in Russia, at least, this has not been the effect, as the prices bid by private manufacturers in competition with the Government plant are actually higher than those now being paid in this country to the armor manufacturers.

6. Any opinion the bureau might express on this point would have no foundation aside from the information which is already at the disposal of the department, and the bureau therefore considers it unnecessary to express such opinion.

7. In connection with the proposed Government armor-plate factory consideration must also be given to the probable effect on the private armor makers of the Government entering the armor-making field. There is probably no question that the Government could manufacture armor, at least after the industry was well established, at a price considerably below what it would be obliged to pay to private manufacturers, and the result would naturally be that the Government factory would be given as much work as it could handle, and that only the balance would be given to private manufacturers. Assuming a building program of two battleships a year, the amount of armor required annually would be about 20,000 tons, of which from 16,000 to 18,000

tons would be actually applied to the vessels and the remainder would go into rejected plates, ballistic plates, shell-test plates, and plates for other miscellaneous purposes. If the Government factory had a capacity of 20,000 tons per year, there would be no balance remaining to be assigned to private manufacturers, unless the building program were expanded. If the Government factory had a capacity of 10,000 tons per year, the amount to be awarded to private manufacturers would be 10,000 tons, which is just about the full capacity of the Carnegie Steel Co. and the Bethlehem Steel Co., and is slightly above the capacity of the Midvale Steel Co.

8. Under the conditions supposed—that is, an annual demand for 20,000 tons and a Government capacity of 10,000 tons—it seems inevitable that one or more of the existing armor factories would abandon the business. If two remained in the field, there might, seemingly, be active competition between them for orders; but if only one remained in the field and the Government were obliged to purchase from that concern such armor as it could not manufacture itself, there seems to be no reason why such concern should not demand its own price for its armor, and the competition and the reduced prices which are sought by the establishment of a Government plant would not be realized.

9. For the foregoing reasons, and for the additional reason that armor can be produced at a lower price per ton in a large plant than in a small one, it is recommended that the department give very serious consideration to the plan of erecting a plant having an annual capacity of 20,000 tons per year, should it be decided to erect any plant. Such a move would, in all probability, throw all the armor-making industry of the country into the hands of the Government, although it is possible that one or more of the existing concerns might retain their plants with the expectation of foreign orders or of securing orders from the Government in competition with the Government factory. This seems to have been the case in Russia, where at least one private establishment exists as well as the Government factory.

10. In this connection the department is reminded of the experience of the French Government with its armor-plate factory, the facts concerning which are already in the department's possession. It is to be noted that at present, some 13 years after the project was approved by the French Parliament, the plant has made no savings that compare with the anticipated savings and is still unable to turn out any kind of armor, except thin plates. These facts are partly due to the further fact that the plant, as originally planned, was found to be unsuitable for turning out armor of the kind that came into use a few years ago; that is to say, K. C. armor.

PROBABLE COST OF AN ARMOR PLANT.

11. Appended hereto, marked "A," is a drawing showing a proposed layout of an armor-plate and gun-forging plant. The layout of this plant is similar to the layout proposed by the Armor Factory Board in 1897, but somewhat modernized and brought up to date, and the gun-forging plant is added. The arrangement of the plant is such that raw material goes in on one side and is stored in suitable storehouses awaiting use; it then proceeds to the open-hearth department; thence to the various manufacturing shops. In the case of the armor plant the steel ingot would go first to the forging and forming shop; thence to the cementing and tempering shop; thence back to the forging and forming shop; and thence to the machine shop, which is also the erecting shop; thence the finishing plates pass out for shipment.

12. The arrangement of having the ingot return on its tracks might be considered as illogical, but it is due to the fact that by establishing such a route all of the heavy hydraulic machinery can be concentrated in the forging and forming shop, which would not be the case if the ingot after leaving the open-hearth department proceeded through the plant without return.

13. In the gun-forging department the ingot passes successively from the open-hearth department through the boring and shearing shop, press house, the annealing building, and the machine shop, in which it is completed and made ready for shipment to the gun factory.

14. The layout shown on Appendix "A" requires an area of about 75 to 80 acres. This does not include such land as might be needed for a proving ground.

15. In the estimates of cost of an armor factory it has been assumed that 80 acres could be purchased at a cost of \$300 an acre. This estimate may be high or low, but in any case the cost of the land is so small a portion of the total cost that it is not essential that it should be accurately estimated. Furthermore, it is possible that should such a plant be established the site selected would be already in the possession of the Government.

16. Appended hereto, marked "B," is a summary statement of the estimated cost of an armor-plate factory and gun-forging factory. This summary shows—

First. The cost of a complete armor factory in which steel for the armor is to be manufactured from pig iron and the necessary alloys.

Second. The estimated cost of an armor-plate factory, assuming that the ingots for the manufacture of armor plate will be bought and not made in the factory.

Third. The additional cost due to the addition of facilities for manufacturing gun forgings.

Fourth. The cost of a proving ground for testing plates.

17. With respect to the scope of the proposed armor-plate factory, the bureau is strongly of the opinion that if a factory is to be established at all it should be capable of manufacturing its own steel; and as to the gun-forging plant, it would not be worth while to erect such a plant at all unless it were capable of manufacturing its steel.

18. The advantages and disadvantages of establishing a plant capable of producing steel were very fully set forth by the Howell Board in its report to the Navy Department under date of December 1, 1897. One of the disadvantages stated by the board was the greater first cost of the plant, which it places at about \$520,000, which was about 14 per cent of the total cost of the plant, whereas in the present estimates the steel-producing plant represents only about 10 per cent of the total cost of the plant.

19. Appended hereto, marked "C," are the detailed estimates supporting the summary of estimates already referred to. These estimates have been prepared after consulting all previous publications on the subject, receiving reports from the bureau's inspectors at the armor factories, and receiving estimates of cost of machinery from various sources, and are believed to be as nearly accurate as it is possible to make them without actually drawing up complete plans and specifications and receiving estimates from manufacturers of machinery, builders, and others.

20. The estimates are so divided as to show the probable cost of erecting plants of 20,000 tons, 10,000 tons, and 5,000 tons annual capacity of armor, and an annual capacity of 5,000 tons for the production of gun forgings. The latter is probably in excess of the Navy's requirements for gun forgings, but as there will be no great saving in erecting a small plant and as there are many other articles used by the Government which could be turned out by such a plant, including gun forgings for the Army, shafting, and material of a like nature for the Navy and other departments of the Government, it is thought desirable, if such a plant is erected, that it be of the stated capacity.

21. If the site chosen for a Government factory were far removed from the present proving ground considerations of economy might suggest the provision of a proving ground for armor tests only adjoining the armor factory.

22. It is to be noted that the gun-forging plant is in no respect an essential part of the general scheme and can be entirely omitted without affecting the armor-plate factory proposition in any way. The bureau, however, considers it very desirable that if an armor-plate factory is erected a gun-forging plant be also erected.

COST OF ARMOR AS NOW MANUFACTURED IN PRIVATE WORKS.

23. The probable cost of production of armor by a private plant has been estimated at various times by boards and other agencies under the direction of the department, and these estimates have been reported to Congress and published in congressional documents. The bureau, in making up its estimates, has given due weight to the information found in these reports and has received estimates from all its armor inspectors based on their own observation and knowledge. Using all the information thus made available the bureau has prepared an estimate of the cost per ton of producing finished plates of K. C. class A armor. This estimate is hereto appended, marked "D." It must be understood that no one except the armor makers themselves can give an entirely trustworthy statement of the cost of manufacturing armor, but the estimates submitted are the best the bureau can produce without having access to the actual facts, which are doubtless of record in the armor makers' books of account. A very material factor in the cost of armor is the sum of the administrative costs, and these are dependent, in great measure, on the salaries paid to the officials of the company and to the metallurgical and other experts directly engaged in the manufacture of armor. The bureau has every reason to believe that these salaries are high, but has no means of ascertaining their exact figure.

PROBABLE COST OF ARMOR MANUFACTURED IN A GOVERNMENT PLANT.

24. Appended hereto, marked "E," is an estimate of the cost per ton of manufacturing K. C. armor, class A, in a Government plant.

25. The basic estimate is of the cost of a ton of armor produced in a plant having an annual capacity of 20,000 tons and working at full capacity. From this, by careful

scrutiny of the items, have been derived the probable costs of armor produced in quantities of 10,000 and 5,000 tons annually in plants having capacities, respectively, of 20,000 tons, 10,000 tons, and 5,000 tons. These figures have, of course, a direct bearing on the question of the advisability of erecting a plant of one or another of the capacities named and on the economy that might be expected from the operation of such a plant.

26. As in the case of private-manufactured armor, a considerable element of cost is the amount added to the production cost to cover the administrative charges. The Government does not, as a rule, pay salaries as large as those paid by private concerns, but it is believed that the success or failure of a Government armor plant will depend, in great measure, on the character and ability of the civilian experts employed in connection with the production of steel and other processes of manufacture. Unless the Government is prepared to pay large salaries it can not expect to operate a successful plant—one which will turn out armor of the best quality at a reasonable cost.

QUALITY OF AMERICAN ARMOR.

27. The bureau believes that very careful consideration should be given, in connection with this proposition, to the quality of armor which would probably be turned out by a Government factory. At present there are very strong reasons for believing that the armor of domestic manufacture is superior in resisting power to any armor of foreign manufacture. Evidence of this supposed fact is found in various reports which the bureau has had from time to time regarding ballistic tests of foreign armor and projectiles. The projectiles manufactured in England by the Hadfield process have, according to numerous reports received, the accuracy of which can scarcely be doubted, been very successful in their attack on European-made armor for Great Britain, Japan, and other countries. The same shell have not been successful to the same extent in attacking American-made armor. Furthermore, the bureau within the past few months has tested at the Naval Proving Ground at Indian Head a number of projectiles made by the Girod electric process in France and which were delivered to the bureau as being the best projectiles that the process could produce. The performance of these projectiles against our armor plate was not good and did not compare well with the performance of American-made projectiles. Since this test the bureau has received from the American agents of the Girod Co. photographs showing the results of the test of Girod projectiles against French 12-inch K. C. plates at 15° angle of attack. The result was a complete penetration of the plate without visible damage to the projectile.

28. Furthermore, the bureau has been recently informed that at Spezia, Italy, when certain projectile tests were in progress the projectile manufacturers refused to allow their projectiles to be tested for acceptance against Carnegie armor plates, which would seem to indicate the superiority in resisting power on the part of those plates as compared with the European armor plates. The Italian Government conducted these tests for its own information, with the result that the resistance of Carnegie plates was shown to be greater than that of the Terni plates.

29. The bureau believes that the superior excellence of American armor is due to the fact that the Bureau of Ordnance has consistently and persistently demanded from armor makers the best armor they could produce and has from time to time increased the severity of its specifications, particularly as to ballistic test, and also to the fact that the armor makers have honestly and conscientiously striven to produce the best possible armor. There have been instances in the past of fraud by at least one of the armor factories, whereby inferior armor was furnished, and such instances might occur again, and the Government must depend on the honesty and vigilance of its inspectors to prevent them. Similar frauds might, indeed, be practiced at a Government plant if the vigilance of the inspection corps were relaxed.

30. The excellence of armor is determined, mainly, by two processes in the manufacture:

First. The production of the steel.

Second. The heat treatment of the ingot.

Both of these processes require a high degree of metallurgical knowledge, which must be paid for at a high rate. Unless competent metallurgists, open-hearth superintendents, carbonizing superintendents, and inspectors of heats are employed the quality of armor produced will necessarily be below the standard of that produced by private parties by whom high salaries are paid.

31. The bureau is by no means desirous of paying more for armor, whether made by private parties or by the Government, than the lowest price at which the best armor can be produced, but it is strongly of the opinion that the primary and most important consideration is quality and that cost is entirely secondary.

REMARKS ON SITE FOR PLANT.

32. Several points must be considered in deciding on the site for an armor plant. The principal ones are the following:

First. Geological character of site.

Second. Facilities for securing raw material.

Third. The labor market.

Fourth. Facilities for delivering completed material.

33. The forging presses used in the manufacture of armor and of gun forgings are very heavy and operate under a very high hydraulic pressure. Consequently the foundations for them must be of the firmest character, and it is not thought that these machines could be properly installed except on rock bottom. It is therefore desirable and practically necessary that the site selected should offer rock bottom at a moderate depth—probably not more than 30 feet.

34. Regarding the facilities for securing raw material, other things being equal, the best site would be one in the coal and iron regions of Pennsylvania or other State producing the same quality of coal and ore, possibly Alabama. Such a location would materially reduce the cost of securing raw material owing to the reduced transportation charged.

35. The labor market must be given some consideration, although it is quite probable that if the industry were established in any vicinity the necessary labor could ultimately be secured provided there was a fair prospect of continuous work. To establish a factory, however, in a location in which no allied industry is now established would cause delays in securing the necessary labor and would undoubtedly increase the cost of manufacture for a considerable time.

36. As to the facilities for shipping completed material, a tidewater site would undoubtedly be best from this point of view, since water transportation is cheaper than rail transportation and does not impose conditions as to size and weight of armor plates which are imposed by land transportation. The cost of land transportation for armor plates is not excessive, but the sizes of cars, dimensions of tunnels, bridges, etc., have placed a practical limit on the size of armor plates. If these conditions were not imposed it might be found best in the future to make larger armor plates, which would be an advantage from the point of view of the efficiency of the armor in protecting the vessels to which it was supplied.

37. Should the proposed armor factory be established within a reasonable distance of the existing Naval Proving Ground, Indianhead, Md., the ballistic tests of plates could be conducted at that station. Should the plant be established, however, at some interior point it might be found most economical in the long run to spend the necessary additional funds for the establishment of an auxiliary proving ground adjacent to the factory.

[Inclosure B.]

SUMMARY OF ESTIMATED COST OF PLANT.

Summary of estimated cost of armor plant, 20,000 tons capacity, gun-forging plant, 5,000 tons capacity, proving ground.

ARMOR PLANT.

Site, grading, and fences.....	\$64,000
Office and equipment.....	75,000
Laboratories and equipment.....	65,000
Tool shed.....	1,500
Brick shed.....	6,000
Carpenter shop, with equipment.....	18,000
Blacksmith shop, with equipment.....	50,000
Storehouse.....	11,600
Comfort stations.....	4,600
Water supply and sewers.....	110,000
Fire service.....	15,000
Oxyhydrogen plant and equipment.....	35,000
Roads.....	5,000
Wiring.....	25,000
Telephones.....	10,000
Dispensary.....	6,000
Hydraulic system, excepting presses and arc lights.....	126,000

Locomotive house, tracks, rolling stock.....	\$234, 600	
Electric plant.....	334, 000	
Boiler plant.....	270, 000	
Open-hearth department.....	1, 216, 200	
Forging and bending shop.....	3, 705, 500	
Cementing and tempering shop.....	2, 187, 500	
Machine and erecting shop.....	1, 686, 710	
Total, armor plant.....	10, 262, 210	
10 per cent for incidentals.....	1, 026, 221	\$11, 288, 431

GUN-FORGING PLANT.

Open-hearth department.....	358, 000	
Ingot bore and slicing department.....	331, 700	
Forging department.....	1, 087, 000	
Annealing and tempering plant.....	759, 000	
Machine shop.....	804, 100	
Total, gun-forging plant.....	3, 339, 800	
10 per cent for incidentals.....	333, 980	3, 673, 780

PROVING GROUND.

Summary attached.....	365, 500	
Grand total.....	15, 327, 711	

Estimated cost of Government armor plant, various capacities, with and without gun-forging plant.

Armor plant, 20,000-ton capacity, but without steel-making facilities....	\$10, 072, 231
Gun-forging plant, 5,000-ton capacity, but without steel-making facilities.	3, 315, 780
Armor plant, 10,000-ton capacity, complete, without gun-forging plant, without proving ground.....	8, 466, 000
Armor plant, 5,000-ton capacity, complete, without gun-forging plant, without proving ground.....	6, 300, 000

[Inclosure C.]

DETAILED COST OF ARMOR PLANT AND GUN-FORGING PLANT.

Detailed cost of armor plant is for a plant of the following capacities:

Maximum capacity per year.....	tons..	22, 000
Normal capacity per year.....	do.....	20, 000
Normal output for installation on board ship.....	do.....	16, 000
Forging per day.....	plates..	2
Cementation per day.....	do.....	2
Reforging per day.....	do.....	2
Treatment per day.....	do.....	2
Hardening per day.....	do.....	2
Testing per day.....	do.....	2
Machine shop per day.....	do.....	1. 64

This output involves 34,000 tons of ingots per year. The magnitude of the masses to be handled may be seen from the fact that on the *Pennsylvania* there were nine finished plates weighing 132,000 pounds each. On the *Oklahoma* there were two ingots, which weighed 325,000 pounds each.

For general use.

Site, 80 acres, at \$300.....	\$24, 000
Grading and clearing.....	20, 000
Fence.....	20, 000
Total.....	64, 000

Office.

Building, two-story brick house 115 by 60; offices on lower floor; tracing room, blue-print room, photographic room, and vault on second floor..	\$55,000
Equipment.....	20,000
Total.....	75,000

Physical and chemical laboratory.

Building, two-story brick 75 by 50, including heating, lighting, and plumbing.....	\$25,000
Chemical equipment.....	10,000
Pyrometric equipment.....	15,000
Physical laboratory equipment.....	15,000
Total.....	65,000

Miscellaneous shops and buildings.

Tool house, 150 by 15.....	\$1,000
Equipment.....	500
Brick shed, 500 by 40.....	6,000
Carpenter shop, two-story brick, 80 by 50.....	12,000
Equipment.....	6,000
Blacksmith shop, one-story brick, 200 by 85.....	25,000
Equipment.....	25,000
Storehouse, two-story brick, 80 by 40.....	9,600
Equipment.....	2,000
Comfort stations, four buildings, \$1,150 each.....	4,600
Water supply and sewerage.....	75,000
Pipe lines.....	35,000
Fire service, including pumps, shed, fire stations, hose, fire hydrants.....	15,000
Oxy-hydrogen building, with equipment.....	35,000
Roads.....	5,000
Wiring.....	25,000
Telephones.....	10,000
Dispensary, two-story brick.....	6,000
Hydraulic system.....	106,000
Lighting.....	20,000
Total.....	423,700

Locomotive house and rolling stock.

Building, 150 by 60 feet, with pits.....	\$12,000
Tools.....	4,000
Locomotives, four standard gauge.....	32,000
Cars:	
One 200-ton.....	\$4,600
Five 50-ton.....	6,000
Five 50-ton, electric.....	15,000
	<hr/>
	25,600
Bogies, 20.....	6,000
Railway track, 7 miles, turnouts, yards, and shops.....	125,000
Trolley, 2,000 feet of.....	6,000
Railway scale, one 150-ton.....	6,000
Locomotive cranes, two 15-ton.....	18,000
Total.....	234,600

Electric power plant.

Building, 60 by 100 feet, \$4 per square foot.....	\$24,000
Machinery:	
Gas engines and generators, 3,000 kw.....	240,000
Auxiliaries, crane.....	20,000
Switchboard.....	10,000
Four producers, \$10,000 each.....	40,000
Total.....	334,000

Boiler plant.

15 boilers, 500 horsepower each, with stokers and stacks.....	\$210,000
Coal and ash handling machinery.....	35,000
Feed-water pumps, piping, steam lines.....	25,000
Total.....	270,000

Open-hearth plant for armor.

Building, structural steel and iron construction, 700 by 166 feet.....	\$338,000
Furnaces:	
Four 60-ton, \$60,000 each.....	240,000
One 30-ton.....	50,000
One 20-ton.....	40,000
Gas producers, 12, complete, with building, foundation, and necessary machinery.....	156,000
Cranes:	
Two 200-ton traveling, with 35-ton auxiliary.....	90,000
One 100-ton.....	30,000
Two 30-ton.....	30,000
Two 10-ton, electric gib.....	18,000
Charging machines, two, \$15,000 each.....	30,000
Ovens, four drying, \$3,000 each.....	12,000
Ladles:	
Six 60-ton.....	9,000
Three 30-ton.....	2,700
Casting pits, two, 40 by 20 by 23 feet.....	60,000
Bogies, 50.....	10,500
Charging boxes, 200, \$25 each.....	5,000
Scales, two 50-ton.....	1,000
Molds, with bottoms and tonghold flasks:	
Two 84-inch cupolas, with blowers.....	9,000
One 66-inch cupola, with blower.....	3,400
Three 25-ton ladles.....	1,500
Two 10-ton ladles.....	600
Flasks.....	5,000
1 drying oven for cores.....	2,500
1 annealing furnace.....	3,000
1 pit for casting iron castings.....	2,000
Charging machinery for cupolas.....	5,000
Stockyard, two 10-ton cranes, 600 feet of runway.....	37,000
Scrap yard:	
Shears.....	8,000
One 10-ton drop crane.....	7,000
Crane runways.....	10,000
Total.....	1,216,200

Forging and bending shop, armor plant.

Building, 1,140 by 218 feet, 3 spans.....	\$600,000
Furnaces:	
5 regenerative ingot, stationary bottoms.....	120,000
11 regenerative, car bottoms.....	302,500
Gas producers, 8, buildings and machinery complete.....	104,000
Presses, 3 forging, with engines, pumps, and accumulators, complete.....	2,000,000
Cranes:	
One 220-ton.....	40,000
Three 100-ton.....	90,000
Six 25-ton.....	60,000
Tanks for water and oil, with pumps.....	45,000
Dies and tools.....	250,000
Scaling machine.....	6,000
Piping and drains.....	80,000
Inspection bed.....	8,000
Total.....	3,705,500

Cementing and tempering shop, armor plant.

Building, 1,140 by 218 feet.....	\$600,000
Furnaces, 39 regenerative furnaces, car bottoms, for cementation and treatment, at \$27,500 each.....	1,072,500
Gas producers, 20, with buildings and machinery complete.....	260,000
Cranes:	
One 200-ton.....	40,000
Three 100-ton.....	90,000
Six 25-ton.....	60,000
Sprays, 2 spraying apparatuses, 18 by 40.....	44,000
Piping.....	15,000
Water reservoirs, two 30 by 15 by 10, concrete on inside of building.....	6,000
Total.....	2,187,500

Machine shop, armor plant.

Building, about 800 feet, with 2 spans 75 feet each.....	\$360,000
Cranes:	
Two 125-ton single trolley traveling, \$34,000 each.....	68,000
Two 75-ton single trolley traveling, \$27,000 each.....	54,000
Two 75-ton double trolley traveling, each trolley 37½ tons, \$30,000 each.....	60,000
Machine tools and equipments:	
3 edge planers, to plane edges of plates 26 feet long by 18 inches thick, any angle.....	\$69,900
5 breast planers, to plane ends of plates 26 by 14 feet by 18 inches thick.....	130,000
1 pit planer, to plane plates 20 by 35 feet by 18 inches.....	63,000
2 standard planers, to plane 12 feet wide by 26 feet long.....	53,700
2 standard planers, to plane 14 feet wide by 26 feet long.....	65,000
1 standard 3 by 3 by 10 foot planer.....	3,900
1 rotary planer and saw combined, 73 inches diameter head, 28 feet longitudinal travel.....	16,400
4 rotary saws, 73 inches diameter saws, 28 feet travel (saw blades not included).....	60,000
4 Universal drilling and milling machines, post 26 feet longitudinal and saddle 12 feet vertical travel.....	100,000
3 portable Universal drilling and milling machines, post 24 inches horizontal, saddle 18 inches vertical, and spindle 26 inches horizontal travel.....	5,625
5 two-post Universal drilling machines, with 16 feet between uprights and 8 feet clear in height.....	78,750
1 radial drill 6 feet vertical, 6 feet horizontal, and spindle 3 feet vertical travel.....	13,400
Three 48-inch standard slotters.....	27,600
3 grinding machines, 36 inches diameter wheel, 32 inches travel.....	29,175
2 tool grinders, Bridgeport No. 5.....	1,000
1 No. 1 Universal tool grinder, "Sellers".....	1,650
1 armor-plate saw-grinding machine.....	1,200
12 Tindel-Morris saw blades, for saw machines.....	10,320
Four 3 by 36 inch New Model turret lathes.....	8,960
1 special nut turret lathe.....	3,200
10 Little Giant (size E) air drills.....	820
6 electric hand grinders, portable.....	1,890
1 erecting pit, 12 by 12 by 36 feet deep.....	975
2 erecting beds, 50 by 150 feet each.....	26,400
50 angle erecting stands.....	7,500
8 sets lifting gear.....	2,240
30 cast-steel lifting dogs.....	4,800
(a) Cutting tools for planers, slotters, saws, etc.....	41,400
Large mills with inserted blades.....	1,120
(a) Small mills, miscellaneous.....	5,874
(b) Sockets for mills, drills, etc.....	800
(b) Boring bars for drilling and milling machines.....	1,000

Machine tools and equipments—Continued.

(a) Flat, twist, and trepanning drills.....	\$11,500	
(c) Taps for bolt holes, nuts, and miscellaneous.....	20,516	
Gauges, plug and ring, for bolts and nuts.....	1,100	
Tap wrenches for miscellaneous taps.....	75	
Ratchet wrenches for tapping, etc.....	125	
(b) Clamps, bolts, stops, etc., for setting up work and securing same on machines.....	5,250	
Gauges, templates, etc., for inspecting plates.....	3,000	
Miscellaneous sledges, hammers, pinch bars, surface gauges, straight edges, measuring tapes, center punches, hose for air and water, etc.....	1,190	
(a) Emery and corundum wheels for grinders, all types.....	2,000	
		\$882,355
Tools for tool room:		
One 16-inch tool-room lathe.....	1,200	
Two 30-inch tool-room lathes.....	5,130	
1 milling machine.....	2,450	
1 tool grinder.....	500	
1 Universal grinding machine.....	1,500	
2 drill presses.....	1,400	
Workbenches.....	125	
Gauges.....	800	
Vises.....	150	
Miscellaneous small tools and equipment.....	1,500	
Arbor presses, tool stands, tote boxes, etc.....	800	
		15,555

NOTE.—Replacement of tools per year: (a) 100 per cent;
(b) 50 per cent; (c) 25 per cent.

Installation of above tools, inclusive of foundations, wiring, etc.....	210,000	
Soda-water system.....	9,000	
Heating.....	26,000	
Scale, 75-ton capacity.....	1,800	
Total.....		1,686,710

*Gun-forging plant.***OPEN-HEARTH DEPARTMENT.**

Building, 160 by 160 feet.....	\$77,000	
Furnaces, 2 acid open-hearth.....	120,000	
Casting pit.....	47,000	
Mold equipment.....	50,000	
Drying ovens, 3.....	24,000	
Cooling ovens, 2.....	16,000	
Cars for ovens, 12, \$1,000 each.....	12,000	
Ingot transfer cars, 2, \$6,000 each.....	12,000	
Total.....		358,000

INGOT BORING AND SLICING DEPARTMENT.

Building, 90 by 160 feet.....	60,200	
Crane, one 80-ton.....	18,000	
Boring mills, three 60-inch horizontal.....	141,000	
Slicing mills, two 60-inch.....	104,000	
Tools.....	5,000	
Heating and lighting.....	3,500	
Total.....		331,700

FORGING DEPARTMENT.

Building, 220 by 550 feet.....	363,000	
Press, one 5,000-ton.....	95,000	
Engine for.....	55,000	
Press, one 2,500-ton.....	72,000	
Engine for.....	47,000	

Crane runs, 200 feet of, for presses.....	\$10,000
Cranes:	
Two 125-ton.....	65,000
Two 100-ton.....	60,000
Dies, mandrels, tools, etc.....	70,000
Service crane, 100-ton.....	25,000
Heating furnaces, 6.....	180,000
Preheating ovens, 3.....	30,000
Circulating pumps and accumulator.....	15,000
Total.....	1,087,000

ANNEALING AND TEMPERING PLANT.

Low building, 90 by 400 feet.....	108,000
High building, 75 by 200 by 100 feet high.....	90,000
Cranes:	
One 90-ton.....	22,000
Two 75-ton.....	37,000
Straightening press, one 800-ton.....	45,000
Annealing furnaces, three, 10 by 100 feet.....	120,000
Gas producers, 9, complete, building, machinery, etc.....	117,000
Coal and ash handling machinery.....	12,000
Stack and gas piping.....	12,000
Vertical furnace, one, 62 feet deep.....	42,000
Pit for.....	30,000
Vertical furnace, one, 30 feet deep.....	20,000
Pit for.....	10,000
Vertical furnace, one, 15 feet deep.....	10,000
Pit for.....	5,000
Oil tank, complete, with pit.....	32,000
Water tank, with pit.....	30,000
Cooling tank, 20 by 30.....	5,000
Circulating pumps, with pipe system.....	12,000
Total.....	759,000

MACHINE SHOP.

Building, 150 by 600 feet.....	360,000
Cranes:	
Two 75-ton.....	37,000
Two 20-ton.....	26,000
Lathes:	
Nine, 6 inches by 38 feet.....	17,500
One, 60 inches by 60 feet.....	9,700
Two, 96 inches by 41 feet.....	69,000
One, 61 inches by 35 feet.....	8,800
Six, 48 inches by 35 feet.....	52,500
Vertical boring mill, one, 42-foot.....	11,800
Planer, 84 by 84 inches by 30 feet.....	15,000
Slotters, six, 60-inch, at \$8,000.....	48,000
Horizontal boring mills:	
One, 34 inches by 49 feet.....	16,000
Two, 48 inches by 45 feet.....	27,000
One, 36 inches by 55 feet.....	16,000
Two, 30 inches by 80 feet.....	68,000
Shapers, six, 24-inch.....	10,500
Test lathes, six, 14-inch.....	4,800
Heating and lighting.....	6,500
Total.....	804,100

Estimate of cost of proving ground in proximity of armor-making plant.

Land, 400 acres, at \$300 per acre.....	\$120,000
Railroad, 2 miles.....	30,000
Gantry crane, 100-ton.....	20,000

Locomotive cranes:

100-ton.....	\$15,000
10-ton.....	6,000
Gun emplacements, 5, at \$8,000.....	40,000
Deck circles, 6, at \$1,000.....	6,000
Bomb-proof and heating tanks.....	20,000
Telephones.....	5,000
Chronograph and photographic rooms.....	10,000
Chronographs.....	1,000
Chronoscope.....	1,500
Wiring, conduit, etc.....	2,000
Firing butts, 10.....	20,000
Steam locomotive.....	8,000
Gondola cars, 4.....	2,000
Storage magazines:	
Smokeless powder.....	10,000
Black powder.....	2,000
Storehouse.....	10,000
Miscellaneous tools, instruments, and appliances.....	10,000
Grading, sewers, drains, fire mains, fences, gates.....	25,000
Armor-conveying cars, 2, at \$1,000 each.....	2,000
Total.....	365,500

[Inclosure D.]

DETAILED COST OF MANUFACTURE OF ARMOR AT EXISTING ARMOR PLANT.

This detailed cost of manufacture of armor at existing armor plant is based on production of 10,000 tons, plant working at full capacity.

Inasmuch as superintendent's cost is applied to other than armor manufacture, a proportionate charge is made to armor.

Cost of ingot.

	Tons.	Unit cost.	Value.
Furnace charge:			
Bessemer pig.....	4.286	\$15.90	\$68.15
Basic pig.....	9.107	17.00	154.20
Pig-iron skull.....	2.232	12.50	27.90
Nickel-chrome scrap, 3 per cent nickel.....	14.376	15.00	215.63
Nickel turnings, 3 per cent nickel.....	6.607	15.00	99.10
Nickel-chrome rails, 3 per cent nickel.....	8.929	15.00	133.94
Nickel in scrap.....	.897	840.00	753.48
Nickel in plaquettes.....	1.000	840.00	840.00
Limestone (Macafee).....	3.570	1.05	3.75
Fluorspar (Ca F ₂).....	.535	10.00	5.35
Sterling ore (67 per cent iron).....	3.571	4.00	19.29
Coal.....	.063	3.30	.21
Stirring rods.....	.045		1.25
A. M. S. metal (aluminum, manganese, and silicon).....	.319	150.00	47.85
Ferrochrome (70 per cent chrome).....	1.295	(1)	203.00
Total charge.....	55.934		2,573.10
Flux (x).....	5.346		
Metal in charge.....	50.588		2,573.10
Furnace and pit losses (10 per cent).....	5.058		
Ingot in pit.....	45.530		2,573.10
Fuel consumed in melting (19.3 tons, at \$3.30).....			60.39
Material consumed in melting.....			5.25
Repairing and preparing furnaces, preparing charge, charging and pouring:			
Labor.....			101.32
Material.....			17.86
Preparing ladles and mold:			
Labor.....			106.18
Material.....			19.25
Lifting mold, stripping and chipping ingot.....			23.10
Power (steam, electric, water).....			25.80
Transportation (proportional).....			78.80
Drafting (proportional).....			2.50
Inspection (proportional).....			1.50
Laboratory (proportional).....			13.06
Ingot at forge.....	45.53		3,028.08

1 2,030 pounds chrome, at \$0.10.

Forging.

	Tons.	Value.
Ingot at forge.....	45.53	\$3,028.66
Ingot condemned (5 per cent).....	2.28	
Ingot forged.....	43.25	3,028.66
Metal in condemned ingots recovered.....		106.62
Ingot forged.....	43.25	2,923.06
Ingot forged into condemned plates (5 per cent).....	2.16	
Ingot entering shipped plates.....	41.09	
Metal recovered from condemned plates.....		100.44
Ingot entering shipped plates.....	41.09	2,822.62
Oxidation and scale (3 per cent).....	1.23	
Slab.....	39.86	2,822.62
Labor for forging.....		58.20
Material.....		17.38
Fuel and labor.....		118.13
Repairs.....		44.00
Electric power and lights (proportional).....		33.68
Steam (proportional).....		396.53
Drafting (proportional).....		2.75
Inspection (proportional).....		1.50
Transportation (proportional).....		52.52
Slab.....	39.86	3,537.31
Discard (33 per cent).....	13.15	
Plate for carbonizing.....	26.71	3,537.31
Discard recovered.....		552.30
Plate for carbonizing.....	26.71	2,985.01

It is estimated that 5 per cent of ingots are imperfect and not forged. The value of these ingots for remelting covers the cost of handling and cutting them up and their redelivery at the furnace. The 5 per cent allowed for ingots entering plates, later condemned, covers all plate losses throughout manufacture, and the value assigned the recovered metal therefrom allows for its handling, cutting up, and later delivery for remelting, as well as for all losses by oxidation and scale and the labor expended up to the point of rejection.

In forging, 3 per cent of the ingot is considered lost by oxidation and scaling.

Thirty-three per cent of forged scrap is recovered and available for remelting.

Labor charge includes all labor at and about the forging press.

Carbonizing, scaling, and treating.

	Tons.	Value.
Plate for carbonizing.....	26.71	\$2,985.01
Oxidation and scale in treatment (3 per cent).....	.80	
Plate for treatment.....	25.91	2,985.01
Labor.....		131.75
Material.....		15.30
Fuel.....		86.00
Repairs.....		48.12
Steam (proportional).....		4.94
Electric power and lights (proportional).....		33.68
Drafting (proportional).....		1.25
Inspection (proportional).....		1.50
Laboratory (proportional).....		6.83
Transportation (proportional).....		52.52
Treated plate.....	25.91	3,367.40

Labor charge includes all labor required for cementation, scaling, and other treatment of the plate.

Material charge includes carbonising material, sand brick, plate stands, tools, instruments, water and oil for tempering, and miscellaneous supplies used about furnaces and gas plants.

Repairs include labor and material used for repairing furnaces, pumps, sprayers, and gas producers.

Bending and rectifying.

	Tons.	Value.
Treated plate.....	25.21	\$2,327.43
Labor.....		45.92
Material.....		25.00
Repairs.....		45.91
Fuel.....		12.20
Plate rectified.....	25.21	2,497.43

Machining and erecting.

	Tons.	Value.
Plate rectified.....	25.21	\$2,497.43
Machine scrap (20 per cent).....	5.18	
Plate for machining.....	20.73	3,497.43
Metal received from machine scrap.....		217.56
Plate for machining.....	20.73	3,279.87
Labor.....		344.67
Tempering, repairing, and renewing tools.....		44.00
Oil, waste, grinding disks.....		10.00
Repairs.....		21.08
Water supply.....		5.00
Steam (proportion).....		51.34
Electric power and lights (proportion).....		53.08
Transportation (proportion).....		26.25
Inspection (proportion).....		1.50
Drafting (proportion).....		3.75
Laboratory (proportion).....		6.83
Machined plate.....	20.73	3,827.92

Credit is given for amount of machine scrap.

Labor cost includes labor employed in machine and erecting shop for 16 hours, it being assumed that 16 hours will be necessary to machine plate of size given.

Shipping.

	Tons.	Value.
Machined plate.....	20.73	\$3,827.92
Labor and material.....		12.00
Shipped plate.....	20.73	3,839.92

Labor and material covers painting of the plate, plugging of bolt holes, and erecting structure and car.

Laboratory charges have been computed as follows:

No.	Title.	Per day.	Total.
CHEMICAL LABORATORY.			
1	Chief chemist.....	\$7.50	
1	First assistant.....	5.00	
3	Assistants, at \$4.....	12.00	
14	Analysts, at \$2.50.....	35.00	
5	Outside samplers, at \$2.25.....	11.25	
3	Inside samplers, at \$2.....	6.00	
1	Janitor.....	2.00	
	Supplies, gas, steam, etc.....	68.75 25.55	
PHYSICAL LABORATORY.			
1	Operator.....	4.00	
1	Operator assistant.....	2.50	
1	Clerk.....	1.00	
1	Machining man.....	2.00	
	Steam, oil, waste, etc.....	9.50 5.50	
	Total per day.....		15.00
			109.30

Total per day, one-fourth to armor. Of this one-fourth, one-half goes to the open-hearth department, one-fourth to carbonizing, and one-fourth to machining.

PRODUCTION COST.

The cost of shop superintendence has been obtained in the following manner. The number and classification of employees was taken from actual observation and knowledge, and the salaries given are considered to be close approximations:

No.	Title.	Salary per annum.	Total.
WORKS OFFICE.			
1	Superintendent.....	\$10,000	
1	Assistant ordnance engineer.....	4,000	
2	Chief clerks.....	5,000	
16	Clerks.....	9,000	
14	Draftsmen.....	14,000	
	Total.....	42,000	
	One-eighth to armor, at 10,000 tons output.....		\$5,250
1	Metallurgical engineer.....	9,000	
	One-third to armor, at 10,000 tons.....		3,000
ARMOR OFFICE.			
1	Superintendent.....	5,000	
1	Assistant superintendent.....	3,000	
1	General assistant.....	1,800	
1	Clerk to superintendent.....	900	
1	Stenographer.....	720	
1	Draftsman.....	1,500	
1	Shipper.....	900	
1	Chief clerk.....	1,800	
1	Clerk.....	720	
1	Messenger.....	600	
1	Janitor.....	600	
1	Foreman, tempering plant.....	3,000	
1	Assistant.....	1,800	
1	Clerk.....	720	
	Total (all to armor).....	22,760	22,760

No.	Title.	Salary per annum.	Total.
OPEN-HEARTH DEPARTMENT.			
1	Superintendent of open hearth.....	\$5,000	.....
2	Assistant superintendents.....	4,000	.....
4	Clerks.....	2,880	.....
	Total.....	11,880	.....
	One-fifth to armor, at 10,000 tons per annum.....		\$2,376
	Total.....		33,461
	Per ton (10,000 tons capacity).....		3.35

RECAPITULATION.

For convenience in reference the above costs are tabulated in terms of a ton of plate shipped.

Cost per ton of plate.

Charge.....	\$124. 12
Ingot at forge.....	146. 10
Ingot forged.....	141. 01
Ingots entering shipped plates.....	136. 16
Slab.....	170. 59
Plate for carbonizing.....	144. 00
Treated plate.....	162. 44
Plate rectified.....	168. 71
Plate for machining.....	158. 22
Machined plate.....	184. 65
Shipped plate.....	185. 23
Production cost.....	202. 83

Full cost.

(Reckoned on a capacity of 10,000 tons a year.)

Production cost.....	\$202. 83
Administration: One-seventh of officials' salaries and office expenses, which is the proportion allotted to armor manufacture (one-seventh of \$1,050,000).....	15. 00
Depreciation: 6½ per cent of value of plant, estimated to be \$7,125,000 (life of plant taken to be 15 years).....	47. 52
Taxes and insurance.....	4. 00
Total.....	269. 35

Estimated cost of production of armor of a 10,000-ton plant, producing varying amounts.

	10,000 tons.	5,000 tons.
Production cost.....	\$202. 83	\$220. 00
Administration.....	15. 00	30. 00
Depreciation.....	47. 52	95. 04
Taxes.....	4. 00	8. 00
Total.....	269. 35	353. 04

[Inclosure E.]

DETAILED ESTIMATE OF COST OF ARMOR MANUFACTURED IN GOVERNMENT PLANT OF 20,000 TONS CAPACITY.

PAY ROLL FOR PROPOSED GOVERNMENT ARMOR PLATE.

The wages per day are based on the wages now in force at the Naval Gun Factory. The number of per diem employees is based on three eight-hour shifts, Sundays and holidays excluded. The pay table shows the total number, but does not divide them into shifts. Employees work 284 days a year, but are paid for 313 days. It is

estimated that 407 employees would work on Sundays, as the power plant must be in operation, and one shift in the open hearth must be coming on at 4 p. m. to start a molt for tapping on Monday.

Position.		Salary per year.
GENERAL OFFICERS.		
General manager.....		\$20,000
Works superintendent.....		10,000
Open-hearth superintendent.....		6,000
Forging-plant superintendent.....		5,000
Armor-treatment superintendent.....		5,000
Machine-shop superintendent.....		4,000
Chief engineer of plant.....		4,000
Metallurgist.....		6,000
Chemist.....		2,500
		62,500

No.	Position.	Wages per day.	Total per day.
MAIN OFFICE.			
1	Chief clerk.....	\$5.04	\$5.04
5	Stenographers.....	3.28	16.40
6	Clerks.....	3.72	22.32
6	Messengers.....	1.76	10.56
1	Janitor.....	2.00	2.00
2	Assistant janitors.....	1.76	3.52
1	Draftsman.....	5.04	5.04
5	Draftsmen.....	4.00	20.00
27			84.88
PAY AND TIME OFFICE.			
10	Clerks.....	3.76	37.60
LABORATORY.			
4	Assistant chemists.....	4.40	17.60
2	Assistant metallurgists.....	5.04	10.08
2	Testing-machine men.....	3.52	7.04
2	Clerks.....	3.52	7.04
10			31.76
BLACKSMITH SHOP.			
5	Hammermen.....	3.10	15.50
1	Heater.....	2.88	2.88
5	Tool dressers.....	3.12	15.60
2	Tool temperers.....	4.00	8.00
5	Blacksmiths.....	3.12	15.60
1	Clerk.....	3.52	3.52
19			61.10
CARPENTER SHOP.			
1	Chief carpenter.....	5.04	5.04
4	Pattern makers.....	4.00	16.00
12	Carpenters.....	3.76	45.12
6	Painters.....	3.00	18.00
1	Clerk.....	3.52	3.52
24			87.68
POWER PLANT.			
3	Foremen.....	5.04	15.12
15	Water tenders.....	3.28	49.20
15	Firemen.....	2.12	31.80
12	Laborers.....	1.76	21.12
3	Oilers.....	2.80	8.40
20	Repair gang.....	3.12	62.40
6	Engineers for generators.....	3.28	19.68
6	Electricians for generators.....	3.28	19.68
80			227.40

No.	Position.	Wages per day.	Total per day.
LOCOMOTIVE HOUSE.			
2	Cranemen.....	\$2.80	\$5.60
10	Engine drivers.....	3.04	30.40
10	Firemen and helpers.....	2.72	27.20
10	Motormen.....	2.72	27.20
4	Locomotive crane drivers.....	3.04	12.16
12	Locomotive crane crews.....	2.00	24.00
5	Repair gang.....	3.52	17.60
5	do.....	3.12	15.60
58			159.76
STOREHOUSE.			
7	Clerks.....	3.75	26.25
6	Laborers.....	1.76	10.56
13			36.81
MISCELLANEOUS (YARD).			
10	Bricklayers.....	4.00	40.00
2	Tool-house keepers.....	2.00	4.00
12	Track laborers.....	2.00	24.00
20	Laborers.....	1.76	35.20
3	Gang bosses.....	2.72	8.16
8	Steam fitters.....	3.28	26.24
12	Electricians.....	3.28	39.36
12	Armature winders.....	3.82	45.84
3	Lamp trimmers.....	2.72	8.16
2	Electric storekeepers.....	2.56	5.12
6	Linemen.....	3.36	20.16
12	Watchmen.....	2.56	30.72
3	Plumbers.....	4.00	12.00
105			292.64
OPEN-HEARTH SHOP.			
1	Foreman.....	8.32	8.32
3	Foreman (sub).....	6.32	18.96
15	Molders.....	3.60	54.00
45	Firemen (producer).....	2.00	90.00
3	Melters.....	6.00	18.00
3	Melters (helpers).....	3.04	9.12
6	Charging-machine tenders.....	3.04	18.24
45	Pitmen.....	2.48	111.60
60	Floor men.....	2.00	120.00
30	Cranemen.....	2.52	75.60
6	Scrap-yard laborers.....	2.00	12.00
1	Scrap-yard boss.....	2.72	2.72
5	Clerks.....	2.52	12.60
1	Messenger.....	1.76	1.76
3	Oilers.....	2.80	8.40
3	Electricians.....	3.28	9.84
45	Repair gang (furnaces).....	3.28	146.25
295			717.41
FORGING AND CEMENTING SHOP.			
1	Foreman.....	8.32	8.32
3	Foreman (press).....	6.32	18.96
18	Lever men (press).....	3.12	56.16
15	Chippers.....	2.48	37.20
30	Floor men.....	2.00	60.00
36	Cranemen.....	2.52	90.72
30	Heaters (press furnaces).....	2.48	74.40
3	Engineers (pump).....	3.52	10.56
6	Engineer helpers (pump).....	2.72	16.32
75	Firemen (producer).....	2.00	150.00
3	Floor foremen.....	4.00	12.00
36	Heaters (cementing).....	2.48	89.28
15	Pyrometric-instrument tenders.....	2.24	33.60
42	Scalers.....	2.48	104.16
3	Boss heaters.....	4.00	12.00
2	Clerks.....	2.52	5.04
24	Repair gang.....	2.25	78.00
6	Steam fitters.....	3.28	19.68
3	Electricians.....	3.28	9.84
351			885.64

No.	Position.	Wages per day.	Total per day.
BENDING AND TEMPERING SHOP.			
1	Foreman.....	\$5.32	\$5.32
3	Foremen (press).....	6.32	18.96
18	Lever men (press).....	3.12	56.16
15	Scalers.....	2.48	37.20
30	Floor men.....	2.00	60.00
12	Pyrometric-instrument tenders.....	2.24	26.88
2	Clerks.....	2.52	5.04
15	Repair gang.....	3.28	49.20
6	Steam fitters.....	3.28	19.68
3	Electricians.....	3.28	9.84
3	Boss heaters.....	4.00	12.00
30	Heaters.....	2.48	74.40
3	Floor foremen.....	4.00	12.00
40	Firemen (producer).....	2.00	80.00
30	Cranemen.....	2.32	75.60
3	Engineers (press pump).....	3.52	10.56
6	Helpers (press pump).....	2.72	16.32
3	Engineers (refrigerating plant).....	3.52	10.56
6	Helpers (refrigerating plant).....	2.72	16.32
2	Messengers.....	1.76	3.52
2	Spray tenders.....	2.52	5.04
3	Sand blasters.....	2.24	6.72
6	Oxyhydric tenders.....	2.48	16.88
3	Engineers (oxyhydric).....	3.28	9.84
3	Helpers (oxyhydric).....	2.72	8.16
248			649.96
MACHINE SHOP.			
1	Foreman.....	8.32	8.32
3	Subforemen.....	6.32	18.96
18	Cranemen.....	2.52	45.36
25	Riggers.....	2.00	50.00
150	Machinists.....	3.28	492.00
99	Machinists' helpers.....	2.00	198.00
24	Machinists—tool room.....	3.28	78.72
24	Grinders and chippers.....	2.48	59.52
1	Shop inspector.....	6.32	6.32
12	Inspectors' gang.....	2.24	26.88
6	Electricians.....	3.28	19.68
6	Tool-room tenders.....	2.00	12.00
1	Clerk.....	3.04	3.04
2	Messengers.....	1.52	3.04
372			1,011.84

TOTALS.

Shop.	Employees.	Pay per day.	Pay per year—312 days.
Main office, salaried officials.....			\$62,800.00
Main office.....	27	\$84.88	
Laboratory.....	10	31.76	
Blacksmith shop.....	19	61.10	
Carpenter shop.....	24	87.68	
Locomotive house.....	58	159.76	
Power house.....	80	227.40	
Pay and time office.....	10	37.60	
Storehouse.....	13	36.88	
Yard (miscellaneous).....	105	292.64	
Open hearth.....	295	717.41	
Forging and cementing shop.....	351	888.04	
Bending and tempering shop.....	218	875.55	
Machine shop.....	372	1,011.84	
Additional Sundays.....	{ (a) 1,612	4,284.54	
	(b) 426	806.28	
312 week-days and holidays (adding 10 per cent to a).....	1,773	4,712.90	1,478,166.87
52 Sundays (adding 10 per cent to b).....	470	889.05	42,027.06
Pay roll, grand total.....			1,579,693.99
Pay roll, per ton (16,500 tons).....			95.759

Cost of material, open-hearth charge and producer coal.

Furnace charge.	Price per ton.	Amount used.	Value.
		<i>Tons.</i>	
Bessemer pig.....	\$23.50	52.95	\$1,244.32
Nickel scrap.....	45.00	45.50	2,047.50
Nickel.....	700.00	2.24	1,568.00
Ore.....	7.00	1.50	10.50
Limestone.....	1.25	10.00	23.50
Burnt lime.....	3.75		
Flux.....	12.00		
Fluorspar.....	34.00		
Spiegel Eisen.....	43.00	.40	13.60
Ferrosilicon.....	115.00	.12	5.16
Ferrochrome.....		3.20	368.00
Total charge.....		115.91	5,280.58
Flux.....		10.00	
Metal in charge.....		106.91	5,280.58
Furnace loss (about 8 per cent).....		8.58	
Metal poured.....		97.33	5,280.58
Pit scrap (about 8 per cent).....		8.58	1,308.88
Ingot in pit.....		88.75	4,971.70
Ingot at forge.....		88.75	4,971.70
Forge scale, 3 per cent.....		2.66	
Forged plate.....		96.09	4,971.70
Discard under press, 36 per cent.....		30.99	1,115.64
Plate for cementing.....		55.10	3,856.06
Scale in treatment, 3 per cent.....		1.66	
Treated plate.....		53.45	3,856.06
Carbonizing material.....			38.44
Treated plate.....		53.45	3,894.50
Bent plate.....		53.45	
Rectified plate.....		53.45	
Machine scrap, 28 per cent.....		2 15.01	1,000.40
Finished plate.....		38.44	3,294.10
Producer fuel.....		279.00	937.44
Material in plate for shipping.....		38.44	4,231.54
Material in armor, per ton.....			110.06

¹ Recovered.² At 40 cents.

COST OF MAINTENANCE.

The main equipment to be kept in repair under the heading of "Cost of maintenance" is the following:

- Buildings.
- Railroad track.
- Fence.
- Locomotives.
- Locomotive cranes.
- Railroad cars.
- Bogies.
- Open-hearth furnaces.
- Heating furnaces.
- Electric cranes.
- Gas producers.
- Forging presses with pumps.
- Boilers with pumps and conveyors.
- Electric generators.
- Piping for steam, air, water, and drainage.
- Electric wiring.
- Machine tools.

Material to be supplied under the heading of "Cost of maintenance" includes the following:

Sand.
Brick.
Coal.
Spare parts for cranes and machinery.
New tools.
Parts for pyrometric control.
Miscellaneous steel and iron parts.
Furnace tools.
Cables and slings for cranes.
Piping.
Lumber.
Oil.
Waste.
Miscellaneous bolts and nuts.
Rails for tracks.

Per year.	Value.
(e) Material regularly incidental to output of armor:	
Coal, 133,000 tons.....	\$390,000.00
Open-hearth shop expense.....	50,000.00
Forging-shop expense.....	40,000.00
Treatment-shop expense.....	61,000.00
Bending-shop expense.....	22,900.00
Machine-shop expense.....	30,000.00
	602,900.00
(b) Upkeep of plant, including repairs to buildings, water rent, tracks, equipment and overhauling and renewing of furnaces and machinery, 5 per cent of total cost.....	564,339.05
Total maintenance.....	1,167,239.05
Maintenance per ton.....	72.95

Final cost.

Pay roll per ton.....	\$95.74
Material per ton.....	110.08
Maintenance per ton.....	72.95
Class "A" armor per ton.....	278.77

Estimated cost of production of armor in a Government armor plant, various capacities, varying outputs.

Capacity.	Output per year.		
	20,000 tons.	10,000 tons.	5,000 tons.
20,000.....	\$279	\$349	\$400
10,000.....		314	394
5,000.....			354

Mr. BUTLER. I have seen two or three reports on the establishment of an armor-plate factory. Was this data recently gathered?

Admiral STRAUSS. This report was made June 28, 1913.

Mr. BUTLER. The facts were gathered how recently, though, Admiral?

Admiral STRAUSS. It is a general gathering of facts brought up to that date.

Mr. BUTLER. Does it include some of the facts gathered several years back?

Admiral STRAUSS. All these facts were gathered recently.

Mr. BRITTEN. You offered a suggestion a moment ago regarding the relative increase in cost from 5,000 to 10,000 and 20,000 tons. Can you incorporate that in the record?

Admiral STRAUSS. It would be a very difficult thing to make a valuable estimate on that point.

Mr. BUCHANAN. Is this estimated cost the outside cost—the most it would cost?

Admiral STRAUSS. I would take that to be the highest cost.

Mr. STEPHENS. Did this \$440 per ton, the price of the last contract, include transportation charges? Was that the price f. o. b. the yard for construction or f. o. b. the factory?

Admiral STRAUSS. That is f. o. b. at the works.

Mr. STEPHENS. Do the figures submitted by the department as the cost per ton if manufactured by the department include transportation charges, or are these estimates made for the mere production?

Admiral STRAUSS. That is not a very costly part of the whole charge. I doubt if it is included. We could not put that in because we do not know where we are going to have the plant or to what place the product will be transported.

Mr. STEPHENS. I would like to know whether or not the transportation charges were included in one and not in the other?

The CHAIRMAN. You say that the transportation charges are small?

Admiral STRAUSS. The charges would be very small on the supposition that the plant were erected near our eastern seaboard where the ships are built. I fancy that the charge per ton would not amount to more than \$1 or \$2.

Mr. BATHRICK. You would not figure on saving freight on the finished product by having the plant on the eastern seaboard?

Admiral STRAUSS. No, sir.

Mr. BATHRICK. The heavy freight comes on the raw material?

Admiral STRAUSS. We would locate the plant where we could get raw material with no great charge for freight.

Mr. BUCHANAN. Where are the present plants located?

Admiral STRAUSS. The Midvale plant is located just outside of Philadelphia; the Bethlehem Steel Co. at South Bethlehem, Pa.; and the Carnegie plant at Homestead, Pa., near Pittsburgh.

Mr. BUCHANAN. What is the capacity of those plants, do you know?

Admiral STRAUSS. Those plants are supposed to have a capacity of about 10,000 tons each per annum.

Mr. LEE. Why are those plants located in Pennsylvania?

Admiral STRAUSS. Pennsylvania has seemed for many years to be the headquarters of the steel industry of the country, and the armor-plate industry was an outgrowth of the existing steel industry.

Mr. BUTLER. And Pennsylvania has the iron ore, limestone, and coal?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. I would like to ask the admiral a few questions. The rejections and defective plates are quite a percentage of the total output, are they not?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. If we had a Government factory, what use could we make of the rejected and defective plates?

Admiral STRAUSS. It depends on what they were rejected for or what the defects consist in. If the plates were of inferior armor, we could not use them for any purpose.

Mr. ROBERTS. I will assume for the purpose of my inquiry that the plates are defective and rejected for the same cause that privately made plates are rejected and defective?

Admiral STRAUSS. Most of our rejections are for inferior armor plate; that is, they have missed something in the process of manufacture which has not made it a good plate. Those plates would be of no value to us. The only use we have for plates other than those placed on board the ships is for the purpose of testing shells, and we demand standard plates for that purpose. If a plate were cracked—one corner had a crack or something of that sort—there would be an area of the plate left sufficient to make it valuable for the purpose of testing shell.

Mr. ROBERTS. That would be a small percentage of the rejections?

Admiral STRAUSS. A very small per cent. You could not consider that seriously.

Mr. ROBERTS. What per cent of the cost of the finished, accepted plate have you put in for rejected and defective plates?

Admiral STRAUSS. We have included the rejections in this estimate.

Mr. ROBERTS. Is your percentage for rejections and defective plates as high as the percentage in the private plants by actual experience?

Admiral STRAUSS. It is based on the success of the private plants. Our percentage of rejections was included in this report.

Mr. ROBERTS. Would you anticipate a greater number of rejected plates in the beginning of such a plant than after it had been in operation some time?

Admiral STRAUSS. I fancy that we would have a good many rejections at the outset. We would have to get our force together and learn how to make armor.

Mr. ROBERTS. I notice in the back of the Navy Year Book for 1912 a table giving what purports to be a list of prices paid by the naval powers for armor. There are two classes, "average of all armor" and "Krupp armor," and the Krupp armor apparently in every instance is cheaper than the average of all armor. Are we using Krupp armor?

Admiral STRAUSS. The armor we use is what is known as Krupp cemented armor.

Mr. ROBERTS. That is the armor upon which these prices are based?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. What does it mean by "average of all armor"? Is there any other kind of armor which we or other nations are using?

Admiral STRAUSS. We have another armor that is not face-hardened, as it is called; that is an alloy steel specially treated, and is used for such things as turret tops, conning tower tops, and protective decks.

Mr. ROBERTS. Is that more expensive than the Krupp armor?

Admiral STRAUSS. It is more costly than class A, which is Krupp cemented armor.

Mr. ROBERTS. Do you know anything about the figures in this table, the price per ton paid by other nations?

Admiral STRAUSS. I do not know their origin.

Mr. ROBERTS. Whether they are reliable or not?

Admiral STRAUSS. No, sir.

Mr. ROBERTS. If I understood you, the last contract for armor was at \$440?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. Is it possible for you to estimate the cost of the supplies which have been manufactured by the Government, about what it costs the Government to manufacture them? For example, when they started to manufacture powder was an estimate made at what they could manufacture it?

Admiral STRAUSS. We had some knowledge of the manufacture of powder. We had a going plant at Newport which turned out about 400 pounds of powder a day and we had something to work on. It did not give us, as it turned out, very much of a clue as to what we could finally manufacture the powder for, because we have eventually produced it on a very much larger scale.

Mr. BUCHANAN. Was it produced within the estimated cost after we got to producing it on a large scale?

Admiral STRAUSS. I do not think any estimate was made.

Mr. BUCHANAN. How about the manufacture of guns?

Admiral STRAUSS. We have always manufactured the guns. We were the pioneers in the manufacture of large guns; that is, the Navy itself, and no estimate was made.

Mr. BUCHANAN. What is the difference in the cost of manufacturing the guns and purchasing them?

Admiral STRAUSS. We manufacture the largest gun for something like \$60,000, and we buy that gun for \$79,000.

Mr. BUCHANAN. \$19,000 less?

Admiral STRAUSS. That is a saving of \$19,000; a presumable profit to the outside manufacturer of 30 per cent.

Mr. WITHERSPOON. Admiral, I would like to ask you a question or two. The *New York* and *Texas* have their armor?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. Then we have four other battleships in the process of construction. How many of these vessels does this contract for armor plate provide for?

Admiral STRAUSS. That provides for armor plate for battleship 39.

Mr. WITHERSPOON. Then all the battleships that have been authorized are provided for, so far as armor plate is concerned, under this contract?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. The necessity for a factory to manufacture armor plate is based on the assumption that we are to have more battleships to put armor on. Is that right?

Admiral STRAUSS. Yes, sir.

Mr. WITHERSPOON. In figuring the profit which we would make if we had a factory of our own, did you calculate in the interest on the investment that we would have to make?

Admiral STRAUSS. That is not included.

Mr. WITHERSPOON. What rate of interest do you calculate on the \$11,000,000 which we would have to pay for a 20,000-ton capacity factory?

Admiral STRAUSS. Three per cent on \$11,288,000.

Mr. WITHERSPOON. I would like for you to state in figures in the hearings how much profit, according to your estimate, we would make on the armor plate in the three factories which you have described.

Admiral STRAUSS. Yes sir.

(The statement referred to is as follows:)

20,000-ton plant.

The 20,000-ton plant would have interest charges amounting to, per ton of capacity.....	\$21. 16
Rejections taken into account with a production cost of..... per ton..	279. 00

Total cost would be.....do..... 300. 16

With no allowance for salaries of naval officers, taxes, or insurance, which represents a profit of nearly \$140 per ton on class A armor.

10,000-ton plant.

Interest per ton.....	\$35. 25
Production cost.....	314. 00

Total cost..... 349. 25

Profit, \$100.75 per ton.

No insurance, salaries of naval officers, or taxes.

5,000-ton plant.

Interest per ton output.....	\$44. 22
Production cost.....	354. 00

Total..... 398. 22

Profit, \$41.78 per ton.

No insurance, salaries of naval officers, or taxes.

Mr. WITHERSPOON. Do we not buy for the Navy a great many pistols, or do we manufacture them?

Admiral STRAUSS. No, sir; we purchase them.

Mr. WITHERSPOON. We purchase the shell; we do not make any of the shell?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. If we were to establish a plant for the manufacture of armor plate, could it be so arranged that you could manufacture the pistols, the shells, and other things that we now buy?

Admiral STRAUSS. We can manufacture everything that we use, if we wish. Of course, some years would elapse before we had perfected the designs and got our force working properly. Most of the approved small arms are under patent to-day by private firms, and we would have to develop a small arm of our own, or else pay a royalty on the existing designs.

Mr. WITHERSPOON. Would it be a practical thing in the same factory to manufacture the shell and the small arms as well as the armor; could you do that all in the same factory?

Admiral STRAUSS. It would not be advisable.

Mr. WITHERSPOON. You would have to have separate factories for each one?

Admiral STRAUSS. You could make it an adjunct to the existing gun factory better than you could attach it to an armor-plate factory.

Mr. WITHERSPOON. How about the shell; could you manufacture them in the same factory where you manufactured the armor plate?

Admiral STRAUSS. You could, but it would not be advisable.

Mr. WITHERSPOON. Could one of these navy yards from which we receive so much complaint because they do not get any work and where they are urging us to have all the work done, could they be changed into a factory for the manufacture of armor plate?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. Would not the buildings be suitable?

Admiral STRAUSS. Not at all.

Mr. WITHERSPOON. You would have to have special buildings for that purpose?

Admiral STRAUSS. An armor-plate factory would have to. It would be well to locate it with reference to the geological conditions, the labor market, the source of supply of raw material, and the shipping facilities.

Mr. WITHERSPOON. In regard to this purchase of land for the proving grounds, you have submitted an item of \$20,000, including the purchase of land and buildings, bombproofs, and other equipment. Have you made any provision for the purchase of that land, any contract or option?

Admiral STRAUSS. No contracts. We have looked over the assessment lists and we have made some inquiries of the present owners of the land, but as soon as we begin to ask the price they name such a tremendous figure that it is probable the land would have to be purchased by condemnation in order to get it at a fair price.

The CHAIRMAN. Have you ever known the Government to get land at a fair price through condemnation proceedings?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. There was a provision recommended by this committee to Congress and included in the last bill which went out on a point of order; but this committee recommended to Congress to pass a bill directing the Navy Department to secure an option on this land before we made the appropriation. Was anything ever done about that?

Admiral STRAUSS. That did not become a law.

Mr. WITHERSPOON. I know it did not, but I want to know whether the Navy Department has taken any steps to find out how much the land will cost?

Admiral STRAUSS. Yes, sir; we did, and I have an estimate here of what the land will cost. We approached certain holders of the land and asked them what they would take for it, but they named such large figures that we gave up any such inquiry.

Mr. WITHERSPOON. You think now, in order to get it within the amount of this appropriation, that you would have to resort to condemnation proceedings?

Admiral STRAUSS. Yes, sir; I think we would.

Mr. WITHERSPOON. You have no idea what we would have to pay for it?

Admiral STRAUSS. Yes, sir. I think we would have to pay about \$150,000. We estimate the purchase at \$152,000.

Mr. WITHERSPOON. The \$152,000 is included in the \$200,000?

Admiral STRAUSS. Yes, sir.

Mr. BUCHANAN. How many acres?

Admiral STRAUSS. 4,300 acres.

Mr. BUCHANAN. Are these establishments all run to their full capacity?

Admiral STRAUSS. Yes, sir. We run the powder factory to its full capacity.

Mr. BUCHANAN. In all of our different navy yards?

Admiral STRAUSS. The torpedo factory is not run to its full capacity; that is, we do not employ three shifts there. The process of manufacturing torpedoes is such that the supervisory force would have to be so largely increased that I do not think it would be profitable to run three shifts there. The powder factory at Indianhead has always been run at its full capacity, three shifts, and the gun factory generally has been run at its full capacity.

Mr. BUCHANAN. As I remember, I was told that they were not running the Bremerton yard to its full capacity.

Admiral STRAUSS. They do not. The navy yards, the repair yards, do not run in three shifts. They run but one shift, except on occasions when there is a great hurry to get a ship out. We avoid that condition in the repair work as much as possible, because it is undoubtedly more costly to do the shift work.

Mr. BUCHANAN. How are the navy yards run, compared to that?

Admiral STRAUSS. No Government yard is run three shifts, if we can avoid it.

Mr. BUCHANAN. Are we doing all of our own manufacturing that each of those yards can do?

Admiral STRAUSS. We do all of the repair work at our own yards.

Mr. ROBERTS. You said a moment ago that the geological conditions had some bearing on the location of the armor-plate factory. Would you explain to the committee just what bearing the geological conditions have?

Admiral STRAUSS. The machinery employed in armor-plate manufacturing is very heavy, and a considerable item of additional cost would accrue if we had any extensive piling, either for the building or for the foundation for presses, hammers, etc.

Mr. ROBERTS. In other words, in selecting a site you want to get one with a very solid foundation?

Admiral STRAUSS. We would prefer one with a very solid foundation, other things being equal.

Mr. BUCHANAN. How many navy yards have we?

Admiral STRAUSS. Nine.

Mr. BUCHANAN. Do you think we could do the work we are now doing in the navy yards in a fewer number of yards; that is, could we concentrate the work more?

Admiral STRAUSS. We could reduce the number of navy yards.

Mr. BUCHANAN. To advantage?

Admiral STRAUSS. There are many things which have to be taken into consideration. The question of the strategic location of the yard, that is the principal thing to be considered.

Mr. HENSLEY. Is the *Texas* absolutely completed now?

Admiral STRAUSS. There is some minor work to be done on the *Texas*, but she is practically completed.

Mr. HENSLEY. For service?

Admiral STRAUSS. For service.

Mr. HENSLEY. How long has she been in a state of practical completion?

Admiral STRAUSS. She had her trial trip on October 22d last. At that time there were certain parts of the ship that were not completed.

Mr. HENSLEY. When was she launched?

Admiral STRAUSS. May 18, 1912.

Mr. HENSLEY. How long had she been under construction up to the time of launching?

Admiral STRAUSS. It usually takes about a year on the ways.

Mr. FARR. Has there been any offer made by any private concern to sell its armor plant to the Government?

Admiral STRAUSS. Not within the time I have been on duty here recently that I have any knowledge of.

Mr. FARR. Not since we have been agitating the construction of an armor-plate factory for the Government?

Admiral STRAUSS. If any such offer has been made, it has not reached my department.

Mr. BRITTEN. You referred a while ago to face-hardened armor, 13-inch plates. How deep does the face hardening penetrate, approximately?

Admiral STRAUSS. At the very surface it is extremely hard and you can not file the metal. That condition obtains about three-quarters of an inch deep, and then it shades off to the tough back.

Mr. BRITTEN. Shades off the entire 13 inches?

Admiral STRAUSS. A very short distance.

Mr. FARR. Does the Government do the repairing to all of the ships owned by the Government?

Admiral STRAUSS. We do unless the repairs are urgent and the ship is abroad. Then a contract is made with some foreign repair plant.

Mr. FARR. Does that apply to the ships of the Army?

Admiral STRAUSS. The Army ships, I believe, are altogether repaired by contract.

Mr. WILLIAMS. How long do you estimate it would take to construct an armor-plate factory and get it into operation?

Admiral STRAUSS. About three years.

Mr. WILLIAMS. With the general disarmament of the nations in the meantime we would have a useless structure on our hands?

Admiral STRAUSS. Yes, sir; if they all disarmed.

Mr. FARR. How many ships are there in the Navy?

Admiral STRAUSS. I can not answer that question, but I can secure the information.

Mr. HENSLEY. Admiral, how is the Government situated in the way of submarine and torpedo boats?

Admiral STRAUSS. We need additional torpedo destroyers and submarines and have asked this year for eight destroyers and three submarines.

Mr. HENSLEY. Can you give us the number of submarines that we have?

Admiral STRAUSS. Thirty in commission, 16 under construction, 4 authorized; contracts not yet awarded.

Mr. HENSLEY. In a general way, can you give us more especially an idea of the functions performed by a submarine?

Admiral STRAUSS. The submarines of the present construction are available for use in keeping a fleet off the immediate vicinity of our coast. They have no armor, but they have the better protection of being able to approach an enemy submerged. Undoubtedly they

would keep a blockading fleet farther away from the coast than would be the case if we did not have submarines.

Mr. HENSLEY. About what distance can a submarine travel submerged?

Admiral STRAUSS. They can not travel very far submerged. They can travel a considerable distance on the surface of the water and then, upon occasion, submerge and run by electric power. Their radius of action submerged, of course, depends upon the amount of energy which can be stored up in the secondary batteries which they employ.

Mr. HENSLEY. You are unable to state to what extent that has been developed?

Admiral STRAUSS. From 15 to 25 knots submerged and as high as 5,000 miles on the surface for the very latest design.

Mr. HENSLEY. How many knots speed can they attain?

Admiral STRAUSS. Ten or eleven knots under water and as high as fourteen knots on the surface.

Mr. HENSLEY. What position would an enemy's fleet be in if it should come to our shore for attack if this Government was well supplied with submarines?

Admiral STRAUSS. The fleet would have to keep moving, keep its searchlights busy, and be subject to the danger of a possible attack, but the advent of bad weather would make the submarines take to cover. If the weather were fine the submarines could keep the visiting fleet well off shore, but if the weather were very bad the inferior size of the submarines and their unmanageability would make them go back into the harbor.

Mr. HENSLEY. They would be hard to handle in heavy weather?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Can not any port be successfully defended against an attacking fleet with submarines?

Admiral STRAUSS. To the extent I have stated in my previous answers. They can keep a fleet in fair weather away from the immediate vicinity of the coast.

Mr. HENSLEY. Do these boats act in fleets?

Admiral STRAUSS. Generally they operate in fleets, although they can operate singly.

Mr. HENSLEY. Have you ever been the commander of any of the submarine fleets?

Admiral STRAUSS. No, sir.

Mr. HENSLEY. Do you think of anybody who has been in command of a submarine fleet, Admiral, right now; what naval officer has been in command?

Admiral STRAUSS. Capt. Eberle had the whole flotilla. Capt. Sims has the submarine flotilla now in conjunction with the torpedo fleet.

Mr. ROBERTS. He has both, then?

Admiral STRAUSS. Yes, sir.

Mr. HENSLEY. Do you think it would be advisable to call before the committee an officer who has been in command of a fleet of that character to give us such information as he might obtain as commander of such fleet over information that an officer who has never been in command might have?

Admiral STRAUSS. I think he would probably give you many points about the operation of those boats that would be interesting.

Mr. HENSLEY. We have expended within the last 10 years nearly, if not quite, \$1,000,000,000 in excess of the amount expended by Japan upon her navy. The point I am getting at is simply this: The tax burden resting upon the American people. We to-day are taxing the American people from \$50 to \$60 per family per year to support the Federal Government. That is an enormous sum. The expense goes in support of the military establishment, the Navy and Army, and that going for the purpose of paying for past wars, etc., represents something like 70 per cent of the total. You can see the situation which confronts a Member of Congress who is compelled to return to his people and explain this increase, and I want to bring it to your attention.

Admiral STRAUSS. I am not prepared to discuss that question. The only thing I can do is to come before the committee and urge the needs of the department.

Mr. HENSLEY. You can make such explanation as you wish and put it in the record.

Admiral STRAUSS. No, sir; I would rather that a subject as general as that should be discussed by somebody whose duty it is to consider those questions.

Mr. HENSLEY. We are appropriating annually something like—as much as what countries combined, Judge Witherspoon?

Mr. WITHERSPOON. I figured it up from the Year Book, and I found that for 12 years we have been spending as much money as Germany and Japan both put together and \$11,000,000 in excess of both, \$6,000,000 more than France and Japan both put together, and yet they tell us on the floor of the House that we are rapidly sinking to the position of a seventh-grade naval power.

Mr. HENSLEY. I take it from the statement made by Senator Burton that within a little less than 30 years we have multiplied the appropriations to the Naval Establishment something beyond ten times.

Mr. ROBERTS. Do you mean annually?

Mr. HENSLEY. No; within that length of time we have multiplied it something like ten times. It causes me to stop and consider how far we are going. For instance, if that has been the experience within the last 30 years, within the next 30 years, which is a very short period in the history of a nation, we will be appropriating something like \$1,200,000,000 or \$1,500,000,000 for the Naval Establishment alone. We are increasing much faster than the population.

Mr. ROBERTS. In answer to Mr. Hensley's question, you spoke, Admiral, of a submarine having to take to harbor when the weather got very rough at sea. Can not the submarine stay at sea as long as the battleship for the purpose of maneuvering?

Admiral STRAUSS. I do not think so, sir.

Mr. ROBERTS. Have we not had some demonstration of the ability of a submarine to keep at sea in rough weather—for instance, the trip made by one of the submarines that went from north of Cape Cod to Bermuda on her own power?

Admiral STRAUSS. Yes, sir; a submarine does her work with the periscope out. That is, she is nearly awash. In a heavy sea of course she can not do anything. If she encountered, on a trip of that kind, a very heavy sea, she could dodge it by running submerged for

a while, but that would not last very long. The boat you speak of had good luck with the weather or she could not have made the trip.

Mr. ROBERTS. We have recently sent five submarines from Guantanamo down to Colon.

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Under their own power. Did they have any serious trouble?

Admiral STRAUSS. Not that I have heard of.

Mr. ROBERTS. Do you know the radius on the surface of the latest type of submarine we are building? It has been stated that one could be sent from San Francisco to Honolulu under her own power.

Admiral STRAUSS. I fancy she could.

Mr. HENSLEY. If you were in command of a fleet approaching a country with which we were at war, and you appreciated the fact that they were well supplied with submarines, when you got within the vicinity of them what would your feelings be?

Admiral STRAUSS. I would recognize that we would have to be very alert.

Mr. HENSLEY. Would you keep moving toward the objective point in spite of the fact that you knew submarines were in the vicinity?

Admiral STRAUSS. We would keep moving.

Mr. FARR. Farther away?

Admiral STRAUSS. No, sir. That is one of the defenses of the fleet, to keep moving.

Mr. HENSLEY. It is safer to keep moving than to stand still with those boats in the vicinity?

Admiral STRAUSS. That is the tactic which would be followed against the submarines.

Mr. ROBERTS. Do you know anything of the results of the summer war maneuvers where the submarines have been sent in to attack battleships in broad daylight and in very smooth sea, whether the submarines succeeded in getting in without being discovered?

Admiral STRAUSS. Sometimes they did and sometimes they did not.

Mr. ROBERTS. What proportion got in and what proportion was discovered?

Admiral STRAUSS. At Guantanamo we sometimes sighted them before the time arranged to get in their blow by agreement, but up off Newport I think they often failed.

Mr. ROBERTS. The battleships failed?

Admiral STRAUSS. No; the submarines failed. On one occasion I was on the *Ohio*, the leading ship, and we saw the submarine away off.

Mr. ROBERTS. Was she awash or was the periscope showing?

Admiral STRAUSS. The periscope was showing.

Mr. ROBERTS. In actual warfare, what would have been the actual defense? Before the submarine was in torpedo range could you have put it out of commission by gun-fire?

Admiral STRAUSS. There is some chance of putting it out of commission by gunfire, but a fleet moving along the coast like that at slow speed, in my opinion, should be provided with torpedo nets, and we are getting the torpedo nets for the latest ships.

Mr. ROBERTS. Have we not any torpedo nets?

Admiral STRAUSS. We are providing torpedo nets. England has torpedo nets.

Mr. ROBERTS. Are you familiar with the progress that has been made with what is called the Davis torpedo gun?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Is that proving successful?

Admiral STRAUSS. That has disadvantages which make us very reluctant to use it on our ships. The principal one is that it fires a shell which must be delivered normally to penetrate, whereas a torpedo proper will explode even on the most oblique impact. Then, again, to utilize the Davis torpedo gun you cut down your range very much, enough to bar it out, since the range of the torpedo is of primary importance.

Mr. ROBERTS. Is that something which might be cured by experiment and invention, just as we have increased the range of the torpedo?

Admiral STRAUSS. The increased range of the torpedo is only obtained by increased size, so far as we know now, and the necessary increase in size to use the Davis torpedo gun would be so great as to prohibit it.

Mr. ROBERTS. You speak of the shell fired from this Davis torpedo gun; it must strike point on, so to speak?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Before it will penetrate and explode. Are you not in the same difficulty with respect to the armor-piercing shell of the 12-inch and 14-inch guns?

Admiral STRAUSS. Yes, sir. You have in a measure, but we are pitting the Davis gun against the torpedo, and considering those two weapons only the Davis gun requires a normal blow whereas with the torpedo any blow, no matter how oblique, will be effective.

Mr. ROBERTS. Would not the Davis gun be of use in destroying the net, so as to let the torpedo through?

Admiral STRAUSS. Possibly it would, but that use of the gun would be so fanciful that we do not give it much consideration.

Mr. WITHERSPOON. Mr. Hensley asked you about the defense which could be made with the submarines. My recollection is that Col. Goethals stated to this committee last year that if Panama was supplied with destroyers and submarines that no hostile fleet would dare to come within 500 miles of it. Do you concur in that statement?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. You disagree with him?

Admiral STRAUSS. I should have to differ with Col. Goethals on that question.

Mr. WITHERSPOON. You were asked about the great excess of our expenditures over the expenditures of other nations. I will ask you if, in your judgment, the result of that is not that we have the most powerful Navy on earth, except England?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. You do not think so?

Admiral STRAUSS. No, sir.

Mr. WITHERSPOON. You think that we have expended all of this money and still have a Navy inferior to what nations?

Admiral STRAUSS. I think that we have a fine Navy. Opinions as to the strength and value of the Navy differ very naturally. If you will read the estimates given in the naval annuals, you will find

One navy placed ahead of another and in another the positions will be reversed. Very exact estimates of such a thing can not be formed.

Mr. WITHERSPOON. What nations do you think have a navy superior to ours?

Admiral STRAUSS. I think the navy of England is superior to ours.

Mr. WITHERSPOON. I excepted that.

Admiral STRAUSS. And the navy of Germany.

Mr. WITHERSPOON. Those are the only two?

Admiral STRAUSS. Yes, sir.

Mr. WILLIAMS. Both offensive and defensive?

Admiral STRAUSS. They have more battleships of the first class.

Mr. WITHERSPOON. Mr. Hensley pressed you for your opinion on the question of economy and the advisability of burdening the American people more than they are now for the Navy, and you did not care to answer it. Is it not a fact that that is a question which the chiefs of bureaus of all departments would have to decline to answer because it might bring them into conflict with the policy of the Navy Department?

Admiral STRAUSS. No, sir; I do not think so.

Mr. WITHERSPOON. I asked one of them here a few days ago and he said that that was beyond his jurisdiction and he declined to answer it for that reason. Do you think it is a fact that the chiefs of bureaus do take that into consideration at all in making their recommendations?

Admiral STRAUSS. I have considered that they do. I think we work with as much economy as possible.

Mr. WITHERSPOON. I admit that every bureau shows that they are trying to economize and have economized greatly. That is not the point at all. The question is whether or not the American people, who are already taxed to the amount of \$10 a head for every man, woman and child in the United States to run this Government, whether or not those burdens should be increased? You gentlemen do not consider that.

Admiral STRAUSS. I consider that my duties are these: That Congress determines on a certain building program which demands a certain amount of ordnance and armor to be placed on the ships, and I try to provide that armor and ordnance to be as efficient as possible and at the lowest possible price.

Mr. WITHERSPOON. I understand, but the question was you did not consider it your duty to go into the general expenses of the Government and determine whether it was a good policy to increase those expenditures?

Admiral STRAUSS. I did not mean to say that if I did say it. I did not consider that I was competent to discuss that question any more than any other citizen of the country was able to discuss it. I am here simply to explain estimates submitted for the carrying out of a certain scheme of armament.

Mr. WITHERSPOON. I understand, but you do not consider it a part of your province to go outside of your bureau and consider those questions?

Admiral STRAUSS. No, sir. It is a matter I have not studied as much as I have this particular subject.

Mr. WITHERSPOON. Do you not understand that that is the situation with regard to the chiefs of bureaus?

Admiral STRAUSS. I do not know what they think about it.

Mr. ROBERTS. I understood you to say, Admiral, in reply to Mr. Hensley's question, that we were short of torpedo craft, destroyers, and submarines. Did I understand you correctly?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. What is the standard used to determine whether or not we are short, and where do you get that impression?

Admiral STRAUSS. I take that from the data supplied by the General Board. They state what they think our needs are.

Mr. ROBERTS. And according to that standard we are short so many of the different types of ships?

Admiral STRAUSS. Yes, sir.

Mr. ROBERTS. Did you say that you would put in the record the number of destroyers and submarines that we were short and what we need?

Admiral STRAUSS. No. I said that I would put in the number that we have in existence now.

Mr. ROBERTS. Can you put in the number we should have, according to the General Board?

Admiral STRAUSS. Only so far as stated in this building program. I do not go beyond that.

Mr. ROBERTS. You would not feel like putting in the General Board's program?

Admiral STRAUSS. No, sir. That is a matter which does not come within my province. It is a question debated by them and considered by them and after they have formulated the needs, and the Secretary has passed upon them, this is an effort toward supplying them.

The CHAIRMAN. On page 110, under "Increase of the Navy," there is an estimate of \$6,000,000 submitted for the armor and armament for vessels heretofore authorized. That is an estimate made to complete the purchase of armor and armament of the ships heretofore authorized, and is a matter of calculation?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. Will you need all of that amount, Admiral?

Admiral STRAUSS. Yes, sir; we need all of that.

The CHAIRMAN. Please place in the hearing a statement of the amount required for the armor and armament of one of each of the several types mentioned in the program submitted for the next fiscal year?

Admiral STRAUSS. Yes, sir.

(The statement is as follows:)

Estimated cost of armor and armament for one vessel of each type recommended by the Navy Department for the fiscal year ending June 30, 1915.

(a) Battleship:	
Armor	\$4, 000, 000
Armament	3, 013, 410
	<hr/>
	7, 013, 410
(b) Destroyer, armament.....	401, 454
(c) Submarine, armament.....	170, 400

Mr. ROBERTS. Will you not enlarge that, Mr. Chairman, and have the admiral put in an estimate of the cost of one of each type of vessel under his bureau recommended by the general board?

Admiral STRAUSS. I will put that in. I have here a detailed estimate of the proposed ships, and will file that with a detailed estimate of the ships recommended by the general board.

(The statement is as follows:)

Estimated cost of armor and armament for one vessel of each type recommended by the general board.

[See p. 25 of the Report of the Secretary of the Navy, 1912.]

(a) Battleship—	
Armor.....	\$4, 600, 000
Armament.....	3, 013, 410
	<hr/>
	7, 613, 410
(b) Destroyer, armament.....	401, 454
(c) Destroyer tender, armament.....	2, 034, 325
(d) Submarine, armament.....	170, 400
(e) Submarine tender, armament.....	495, 082
(f) Oiler, armament.....	111, 982
(g) Gunboat, armament.....	133, 313
(h) Transport, armament.....	244, 225
(i) Supply ship, armament.....	111, 982
(j) Hospital ship; no armor or armament required.	

Mr. ROBERTS. One of each type recommended by the general board?

Admiral STRAUSS. Yes, sir.

The CHAIRMAN. What is the size of the battleship estimated for in the program of this year, the same as No. 39?

Admiral STRAUSS. About the same.

The CHAIRMAN. It does not represent a larger ship?

Admiral STRAUSS. No.

Mr. HENSLEY. Have you been in a position to give sufficient thought to it to ascertain whether or not other great Governments, such as England, Germany, and France, are to a certain extent getting away from the big class of boats, the dreadnoughts, and so forth, and giving more attention to-day to submarines, aeroplanes, and to that class?

Admiral STRAUSS. I think there is a great deal of activity all over the world in regard to aeroplanes and submarines, but they have their limitations. We are active in that line, too, but it does not seem to halt the construction of the prime weapon of sea warfare, and that is the battleship. There is not any doubt that that is the prime factor in modern warfare.

Mr. GERRY. Has not that been shown by naval history?

Admiral STRAUSS. Yes, sir.

Mr. GERRY. And that was demonstrated in the war of 1812?

Admiral STRAUSS. It was. There was a period under President Jefferson when they wanted to do away with the Navy, and they hauled the ships up out of the way and England came up here and burned the Capitol.

The CHAIRMAN. Admiral, taking the whole condition of the Navy, the battleships, cruisers, submarines, torpedoes, and personnel, in other words, the efficiency and preparedness of the Navy, what is the present state of efficiency of the American Navy?

Admiral STRAUSS. I think it highly efficient. I have just left the fleet, where I commanded a battleship, and I of course observed everything closely, and took part in the maneuvers and target practice. I am of the opinion that our fleet is very efficient.

The CHAIRMAN. Admiral, we are obliged to you.

Admiral STRAUSS. I thank you, Mr. Chairman.

(Thereupon, the committee adjourned to meet to-morrow, Tuesday, January 27, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Tuesday, January 27, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENT OF REAR ADMIRAL RICHARD MORGAN WATT,
CHIEF BUREAU OF CONSTRUCTION AND REPAIR.

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Watt, Chief of the Bureau of Construction and Repair.

The members of the committee will remember that when we were at Boston on the inspection tour last summer we were interested in the floating crane there, and some of the members of the committee expressed a desire that we should have some further information on the subject of cranes in general, the method of construction, use, etc. If you have any suggestions, Admiral, growing out of your general knowledge of cranes, and also of any hearings that have been had on the subject, the committee will be glad to hear you.

Admiral WATT. Mr. Chairman, I have prepared a statement in the line of argument which leads up to the floating crane, and have distributed sketches to which I shall refer.

The CHAIRMAN. Just pursue your own way.

Admiral WATT. And if I get into too much detail, if you will just indicate it—

The CHAIRMAN (interposing). Just go ahead and give us such information as you desire.

Admiral WATT. I consider that the best appliance for handling heavy weights is an absolute necessity at every first-class navy yard. Every such navy yard may be called upon to do all the work of a shipyard producing and repairing the largest of vessels; that is, handling boilers, reciprocating-engine parts, and even complete turbines, but will also be called upon to handle turrets and heavy guns with great dispatch. It is possible that the success of a naval campaign may be dependent upon the rapidity with which battleships may visit navy yards and have their eroded, and therefore inaccurate, turret guns removed and replaced by new or relined, and therefore accurate, guns.

Admiral Strauss has been talking to you about that—

The CHAIRMAN. Yes, sir.

Admiral WATT. This becomes, therefore, a matter of the gravest importance and one well deserving serious study to insure its proper solution. As naval constructors are the users of the weight-handling devices when provided by the Bureau of Yards and Docks, we have

given this matter exhaustive study. At the request of the chairman of your committee, I am prepared to review hastily our study of crane development.

One hundred years ago, when vessels were of wood and no propelling machinery was fitted, the most difficult weights to handle were the ships' masts. The masts were built on shore, rolled down to the water's edge, floated off to the ship, got on end, and stepped by sheer hulks—a set of sheer legs stepped or mounted on a float or hulk.

With the introduction of machinery, floating off to the ship of crank shafts, or boilers, or engine standards was impossible, and the next step in development was the fitting-out dock and sheer legs thereon. Sheer legs are indicated by figure 1, and, as shown by the diagram, figure 10, a weight suspended from sheer legs is capable of motion in a plane only, about like that [indicating].

Mr. BRITTEN. What sort of a device have you here [indicating], a groove?

Admiral WATT. A screw contained in a groove. Arrangements for rigging in and out assume various forms, but the form here indicated is a horizontal screw on which is a nut which traverses the heel of the inner leg in and out, and rigging in brings the sheer leg back to the dotted position.

Mr. BRITTEN. The principle is the ordinary stiff-leg derrick?

Admiral WATT. Yes, sir. If you will turn to the figure in the lower left-hand corner, figure 10, you will find the sheer legs pictured. Now, those sheer legs handled weights in vertical plane only. I have crossed a line in that sketch. Whenever you wanted to handle a weight it was necessary to shift the ship fore and aft along the sea wall so that the spot on which the weight was to be landed came vertically under the head of the sheer legs.

Mr. BRITTEN. You can lift straight up and down, but no other way?

Admiral WATT. You can lift straight up and down and rig in and out over the cross line shown by figure 10.

Mr. BRITTEN. It would have to be on a straight line?

Admiral WATT. It would have to be on a straight line normal to the sea wall.

Notwithstanding the disadvantages, the sheer legs continued to be for many years the main weight-handling appliance of ship and navy yards. It reached its highest development in the 180-ton sheer legs of Chatham Dockyard in England and the 180-ton sheer legs of John Brown Co., of Clydebank, Scotland.

The Chatham sheer legs are illustrated and popularly described in London Engineering of July 21, 1905, pages 81-84, volume 80.

With the increase in size of ships and the importance of lessening the period during which the capital invested in ships was unproductive, more rapid appliances for handling weights became necessary for shipyard equipment, and there were developed stationary cranes of revolving type, floating cranes, and traveling gantry cranes. The stationary crane of revolving type possessed advantages over the sheer legs in that it could handle weights over the area of a circle instead of on a straight line only. It was not necessary to move the ship so frequently; further, revolution of the crane was much more rapid than rigging the sheer legs in and out.

Again referring to figure 10, the second picture on the lower line shows the larger range of the stationary revolving crane; in that weights

are handled over the area of a circle instead of on a straight line only. Consequently this crane could pick up weights anywhere within this circle [indicating], and land them, of course, anywhere within the circle, making it a much more useful tool. It, however, still necessitated moving the ship along the sea wall. It was much more rapid, because revolving the crane could be done much more quickly than rigging the sheer legs in and out.

The stationary crane took various forms, the ordinary double-cantilever type, the hammerhead or inverted double-cantilever type, the elevating-jib type, and so forth. A hammerhead crane is shown on sketch No. 3.

Mr. BRITTEN. What is this built up of [indicating the cantilever]?
Admiral WATT. Steel.

The stationary revolving crane has reached its maximum development to date in the 250-ton crane at the shipyard of Blohm & Voss, Hamburg, Germany, where 250 tons can be lifted at an outreach of 83 feet beyond the edge of the sea wall.

The Japanese navy possesses a hammerhead or inverted double-cantilever type of crane at the Kure dockyard, which has 200 tons capacity at 105-feet radius, with 70 feet outreach beyond the sea wall, and, further, will hoist from 50 feet below the sea wall to 120 feet above the sea wall. It possesses also an auxiliary hoist of 30 tons at 160 feet radius. This crane is illustrated and described in London Engineering of March 15, 1912, page 350, volume 93.

Mr. BUCHANAN. Is that a revolving crane?

Admiral WATT. That is a revolving crane.

A second 200-ton crane of this type is found at the Fairfield Works, Govan, Glasgow, described in London Engineering of June 30, 1911, pages 842-843. Briefly, of capacity of 200 tons at 75 feet radius and 80 tons at 156 feet radius, and of hoist 145 feet above quay level to 45 feet below quay level.

The largest crane of stationary type in American shipyards is the 150-ton revolving derrick jib, electrically operated, found in the plant of the Newport News Shipbuilding & Dry Dock Co., illustrated by sketch No. 2 herewith, and described in detail in the Transactions of the Society of Naval Architects and Marine Engineers, 1898, page 195, volume 6. This crane will handle its maximum load of 150 tons within a ring of maximum and minimum diameters of 147 feet and 88 feet, respectively.

Probably many of you have seen that crane in operation.

To obviate the expense and risk attendant upon moving the ship, the traveling jib gantry crane was developed. It is illustrated by sketch, figure 4, and by the picture on page 11 of illustrations. This crane, of great capacity, travels upon tracks on the wharf or dock edge and of course serves a rectangular area limited only by the overhang of the crane and the extent of track. That is shown by the sketch in the lower right-hand corner of figure 10. The shaded section shows what area the traveling gantry at Fore River will cover. Because of the enormous weight upon the rails and the necessary placing of the outer rail close to the edge of the sea wall, as you will see on picture 11, the support or foundation for this outer rail is a very difficult engineering problem and a very expensive one to maintain. The folding jib gantry crane found its highest development

in this country in the crane possessed by the Fore River Ship Building Co. at Quincy, Mass.

Mr. BRITTEN. How is that crane operated? Is the inside of the structure anchored in any way?

Admiral WATT. Ordinarily the crane travels back and forth on rails, but when handling the extreme weight at the extreme overhang the crane is clamped to the inner rail. That is only for the extreme weight at extreme overhang. As shown in the picture on figure 11, this arm rigs up so that in moving along the track it can clear smokestacks or the masts of a ship.

Concurrently with the development of the stationary crane the floating cranes came into existence. The first floating crane of which I have been able to obtain any record was built in 1856 at the Delamater Iron Works from the designs of W. J. Bishop. This crane, rated of 60 tons capacity, is still in service at the yard of W. & A. Fletcher Co., of Hoboken, N. J.

London Engineering of May 30, 1873, page 73, volume 15, describes a 100-ton floating derrick, 71 by 66 by 13 feet, built to transport 100-ton blocks for a sea wall in lower New York, from the place where made to the place where laid. The description reads of "type of derrick projected by Bishop many years ago." This crane is still in use, and handled the turrets of the U. S. S. *Florida* as recently as 1910-11, when the yard crane *Hercules* was under repair.

In 1886 a floating crane was built for Tilbury Docks. London Engineering of July 30, 1886, page 119, volume 42, contains the following statement with reference to this crane:

CRANE FOR TILBURY DOCKS.

It will be remembered that on March 8 we reported the launch from the yard of Messrs. Sanuda Bros., Poplar, of a self-propelled floating crane designed and constructed by Messrs. Hunter & English, engineers, of Bow, London, E., under the patent of Mr. Walter Hunter, for the Tilbury Docks extension of the East & West India Dock Co.

This crane was successfully tried on Saturday, the 24th instant, in the Tilbury Docks. The hull is 110 feet long by 44 feet beam, with a depth of 9 feet. The crane is capable of lifting and swinging at a radius of 50 feet weights up to 50 tons, and of transporting them to any part of the docks or river, and of masting the largest ships in the port of London.

On the occasion of the trial the crane steamed down the dock with a load of between 50 and 60 tons which had already, for the purpose of saving time, been suspended from the jib or sheer legs. The vessel proved to be perfectly under the control of the twin-screw compound surface-condensing propelling engines which brought it with the greatest ease alongside the quay in the main dock where the load was to be landed. The load was then lifted and swung, and afterwards deposited upon the quay, the whole of the operations of lifting and slewing and regulating the balance-weight being under the absolute control of one man. The whole of the engines and machinery worked in the most perfect manner and gave great satisfaction to the assembled party. The great saving of time and expense which a crane of this type effects in the working of docks and harbors may briefly be summed up as follows:

1. It obviates the necessity of taking a ship from its berth to the sheer legs when heavy weights required to be taken from it or put on board, an operation which is always attended with some risk and considerable expense, entailing, moreover, the stoppage of all loading and unloading cargo while the ship is away.

2. The crane can steam alongside a vessel, take out or put in a crankshaft, boiler, heavy gun, or armor plate, and remove other heavy weights while the ordinary operation of loading and unloading are being carried out from the quay, or without shifting the ship, whether ironclad or trading vessel from its mooring.

3. The crane hull is constructed so that the guns, boilers, etc., may be placed upon its deck and steamed to or from any ship or any part of the dock or river where the

vessel is lying. The crane can also lift weights out of ships and deposit them in barges on the other side of its own hull without being moved from alongside.

4. The crane is fitted with single purchase for lifting at a quicker rate weights up to 10 tons, etc., so that it may be used for facilitating the ordinary operations and unloading cargo.

5. The crane can be used for masting ships.

As in the case of stationary cranes, floating cranes assumed various types. A crane of this type is indicated on figure 6 and pictured on sheets 12 and 13. Illustration 12 shows a floating crane at the works of Harland & Wolfe, of Belfast, lifting a large boiler into the steamer *Olympic*, and figure 13 indicates the floating crane lying at a dock. The crane is mounted on a float, the jib revolves and can be raised or lowered.

Mr. BRITTEN. Does only the upper part revolve?

Admiral WATT. In that particular picture the turntable is on the deck of the pontoon. This crane is described in London Engineering of July 12, 1912, page 50, volume 94, as follows:

* * * With the growth of merchant ships and the increase in power and weight of machinery, far greater lifting capacity than that of any of the existing cranes in the port became necessary three or four years ago.

* * * to obviate having to move the biggest ships to and fro at the moorings, a floating crane was preferred, because it could be moved along the ship to lift turbines, boilers, and other weights, and place them in the ship wherever required. In the design of this crane an important consideration was the outreach, which had to be as great as possible, in view of the great and increasing beam of ships. A combination of revolving tower and luffing-jib was therefore decided upon, and the result is that the full working load of 150 tons can be lifted to a height of 149 feet above the water level, at an outreach of no less than 100 feet 9 inches from the crane center, with an outreach beyond the pontoon fender of 57 feet, while with any load up to 50 tons the height of lift is 155 feet at an outreach of 143 feet 9 inches from center of fender, and 100 feet beyond the pontoon. Dealing with normal lifts for moderate sized ships, excepting turbines and engines, the floating crane may lie on the off side of the ship, lift a load from the wharf (the jib reaching over the ship), and deposit it in the ship at any point desired.

With the full load of 150 tons there is an outreach beyond the edge of the pontoon of 57 feet.

Mr. BRITTEN. The side edge?

Admiral WATT. The outreach beyond the edge of the float.

Mr. BRITTEN. Fifty-seven feet?

Admiral WATT. Yes, sir; 57 feet clear.

Mr. BRITTEN. The beam of an ordinary battleship is about 100 feet?

Admiral WATT. Yes, sir; about 100 feet.

The question of cranes was very carefully investigated by the Isthmian Canal Commission, and after an exhaustive study the type of crane shown by figure 6 was adopted by the commission, and two such cranes of large capacity are actually under construction at this time in Germany for the Canal Commission.

Mr. BRITTEN. You say that two cranes are under construction in Germany?

Admiral WATT. For the Isthmian Canal Commission.

Mr. BRITTEN. What was the reason for purchasing those cranes in Germany?

Admiral WATT. I understand that the Canal Commission investigated the question very carefully, advertised extensively, and after making full allowance for the tariff, found that they could get the cranes much more cheaply in Germany. The price on those cranes was \$410,175.

Mr. BRITTEN. Each?

Admiral WATT. Each; delivered at Colon.

Mr. BRITTEN. When will they be delivered, do you know?

Admiral WATT. I can not give you a date. They are under construction at the present time.

Mr. BRITTEN. The reason I asked that question, it does not make any difference to me where the cranes are manufactured just so the Government buys them at the cheapest price. I do not think there is anything patentable on a crane of this sort which would require their construction in Germany?

Admiral WATT. There may be details covered by patents. The commission, as I understand it, did not specify any proprietary crane. As a matter of fact, I have with me the Isthmian Canal Commission's Circular No. 743, advertising for those cranes, giving the specifications in detail, and in response to this advertisement the crane selected was a German type of crane.

Mr. BUCHANAN. Have you the bids which were submitted?

Admiral WATT. No, sir; but I am sure we could get them.

Mr. BRITTEN. I would like to have those bids inserted in the record.

The CHAIRMAN. That is all under the War Department.

Admiral WATT. I will endeavor to get them and append them to my hearing.

I am informed by Maj. F. C. Boggs, Corps of Engineers, United States Army, general purchasing officer of the Isthmian Canal Commission, that the following bids were received by the commission for floating cranes as a result of advertisement of the Isthmian Canal Commission Circular 743:

	One crane.	Two cranes.
Cowans, Sheldon & Co. (Ltd.), England.....	£230,000	£115,250
Deutsche Maschinen Fabrik, A. C., Germany.....	\$420,175	\$820,350
Wellman-Seaver-Morgan Co., Cleveland, Ohio.....	\$745,000	\$1,450,000
Werf Gusto, Firma A. F. Smudders, Schiedam, near Rotterdam.....		\$920,000

Mr. BUCHANAN. When was the contract let?

Admiral WATT. Early in 1913. The bids were opened on the 13th of January, 1913.

This type of electrically operated floating crane has reached a still greater development in a 250-ton crane building for Wilhelmshaven, where a 250-ton weight can be handled 59 feet clear of the pontoon or float.

The type of floating crane that has been developed in America is of the suspended bridge truss type. It is indicated on sketches 5 and 8 and on the illustration marked 14. This type of crane is exceedingly awkward to handle, since adjustment in azimuth is obtained only by moving the pontoon itself. Further, by reason of the projection of the truss beyond the float a materially greater area of water front is required for securing same, and in the event of its getting beyond control in handling, or by breaking away from its fastenings, the projecting truss is very apt to tear away masts, stacks, and upper works from ships generally.

The CHAIRMAN. Is that the type of 150-ton crane at Boston?

Admiral WATT. Yes, sir; and at New York.

The CHAIRMAN. Is the New York crane of the same type as the crane at Boston?

Admiral WATT. Yes, sir. The Boston crane is indicated on figure 8 and the New York crane on figure 5. The New York crane is actually pictured on figure 14, showing the overhanging ends projecting beyond the float.

The CHAIRMAN. What have you to say relative to that type of crane, Admiral? When the committee saw that crane at Boston I think that the members were not favorably impressed with it.

Admiral WATT. I think that the type of crane under construction for the Isthmian Canal Commission is a decidedly superior crane.

Mr. BRITTEN. What is the carrying capacity of the crane at the Boston yard?

Admiral WATT. One hundred and fifty tons 62 feet from the pontoon edge.

Mr. BRITTEN. And the Panama Canal crane?

Admiral WATT. One hundred and fifty tons, 57 feet.

Mr. BRITTEN. That is 5 feet additional?

Admiral WATT. Yes, sir.

The CHAIRMAN. The Boston crane has the larger capacity?

Admiral WATT. On figure 9 I have indicated the Boston crane in solid lines and the Panama Canal crane in dotted lines.

Mr. BRITTEN. Have you any idea of the cost of those two cranes?

Admiral WATT. The Boston crane cost approximately \$300,000.

Mr. WILLIAMS. And what is the cost of the Panama Canal crane?

Admiral WATT. The cost of the Panama Canal crane, free of duty, is \$410,000, delivered at Colon.

Mr. BRITTEN. Apiece?

Admiral WATT. Yes, sir.

Mr. BRITTEN. For the difference in efficiency, considering the difference in price, which of the two cranes would you prefer?

Admiral WATT. The Panama Canal crane, very decidedly.

Mr. BRITTEN. The difference in efficiency would warrant paying that difference in price?

Admiral WATT. Yes, sir.

Mr. WILLIAMS. The Boston crane is in operation, and you know what it can do?

Admiral WATT. Yes, sir.

Mr. WILLIAMS. The other crane is only in progress of construction?

Admiral WATT. Similar cranes have been in use in shipyards and other places and we know what they can do.

Mr. WILLIAMS. They are not experimental?

Admiral WATT. Not in any sense at all. Harland & Wolff, Krupp, the Imperial German Dockyard at Kiel, have such cranes in operation.

Mr. BRITTEN. The principle is very superior?

Admiral WATT. The principle is very superior; yes, sir.

Mr. BUCHANAN. Is there any value in the difference of 5 feet in the reach of the arm—any real value?

Admiral WATT. Yes, sir. It would be unwise to provide any crane that did not have an outreach of 62 feet. The reason is that to-day we are building ships with triple turrets, and one of the principal reasons for these cranes is handling turret guns. You should be able to bring your crane to a ship, and, reaching over the ship, take

out the far gun of the triple turret. That involves an outreach of 62 feet.

Mr. BUCHANAN. I understood you to say that the reach of the Panama Canal crane was only 57 feet?

Admiral WATT. Yes, sir. Their requirements are not quite the same as ours. The Panama Canal crane has a greater hoist than there is any reason for our crane possessing.

Mr. BUCHANAN. That type of crane can be made to reach?

Admiral WATT. Yes, sir. As I stated before, they are building a similar floating crane in Germany for Wilhelmshaven Navy Yard that will handle 250 tons 59 feet from the edge of the pontoon, and, of course, that crane will handle 150 tons at a much greater outreach.

Mr. BRITTEN. What does a 14-inch gun weigh?

Admiral WATT. A 14-inch gun with its sleeve weighs about 90 tons. The reason for providing 150 tons is that it may have capacity to lift a stripped turret. In ship building the turret structure is built on the dock and then lifted into the ship. You then proceed to put on armor and install guns and the various interior fittings. The weight of a modern turret is 150 tons and the weight of a modern 14-inch gun and sleeve is about 90 tons.

Mr. ROBERTS. You say that the type of crane for the Panama Canal can be constructed and given the additional 6-foot reach, making it 62 feet, the same as the Boston crane?

Admiral WATT. Yes, sir.

Mr. ROBERTS. Will that add materially to the cost?

Admiral WATT. I estimate that a crane such as we should have would cost about \$450,000.

Mr. WILLIAMS. Where is it proposed to construct a new crane and how many?

Admiral WATT. There was an authorization in the bill last year for a crane for the navy yard at Norfolk to cost \$300,000, and my recollection is that \$150,000 was appropriated last year. The question came up as to what type this crane at the Norfolk yard should assume.

Mr. BRITTEN. Is the \$150,000 available until expended?

The CHAIRMAN. I understand so; yes, sir.

Mr. BRITTEN. Is there any provision in the present bill for an additional amount for the crane?

The CHAIRMAN. I do not recall that now. A contract has not been let yet and the type of crane has not yet been determined upon. One hundred thousand dollars was appropriated last year, and they are asking this year for \$200,000.

Mr. BROWNING. The \$200,000 asked for this year, if appropriated, from what you say, would not be sufficient to get the kind of crane that you should have?

Admiral WATT. It would not give the best type of floating crane.

Mr. BROWNING. You think at the Norfolk yard there should be one of the \$450,000 cranes?

Admiral WATT. Yes, sir. I have no hesitation at all in urging that.

Each type of crane has its advantages, and there were undoubtedly satisfactory reasons for the adoption of the type of crane at each shipyard above referred to. The determination of type and capacity of crane depends upon many things—what you want the crane to do;

whether the yard is a building or repair yard; what size and kind of ships are constructed or repaired in the yard; whether more than one ship is likely to be in finishing stages or under repair at the same time; whether there is abundance of berthing space; whether the heavy weights will be brought to the shipyard by water or rail; whether the weight-handling facilities of the yard center at one point or are equally distributed at many points of the water front; upon the character of the foundation or soil where a stationary or other shore crane would be erected; whether the yard possesses its own dry dock; upon the financial condition of the shipyard owners, etc.

To me the question as to the type of crane for navy yards is solved at once by a study of or reference to figure 10. In the lower left-hand corner you will find that sheer legs serve only a straight line and that it becomes necessary to reserve in front of the sheer legs almost two berths, because the ships must be moved back and forth.

Secondly, on the lower line you have the revolving stationary type. That involves expensive foundations, and it again means that you must keep at least one and one-half times the ship's length clear on your water front, so that the ship can be moved back and forth as necessary in handling the weights. In the lower right-hand corner you will find the traveling gantry type, where the crane travels back and forth on the sea wall. That makes this portion of sea wall a place merely for handling weights. Because of the expense of the foundations for those rails that type of crane is the most expensive type and it is less desirable than the floating type indicated on the upper line.

Mr. BUCHANAN. Is it difficult to maintain the sea wall?

Admiral WATT. It is very difficult to maintain the sea wall. On the upper line, figure 10, are indicated floating cranes. This upper line of floating cranes clearly indicates that there is no necessity for moving the ship. You can secure the ship anywhere that suits your convenience; you can take the crane to the berth where the ship is tied up; you can reach over the ship as far as the center line and pick up the weight to be handled. It means moving a 1-500-ton ponton instead of moving a 15,000 to 30,000 ton ship. Moving a large ship is a considerable risk and expense. It frequently means a cutting off of the power and light supplied from shore, together with resultant loss of time of the workmen aboard, suspension of the men from drill, and matters of that kind. To my mind it is perfectly evident that the floating crane minimizes encroachment upon the water front, and instead of shifting a 15,000, 20,000, or 30,000 ton ship you shift a 1,500 or 2,000 ton ponton instead.

Mr. ROBERTS. The upper left-hand corner sketch indicates a ship lying beside the wall, and the crane is out in the stream?

Admiral WATT. Yes, sir; the upper left-hand corner outline indicates the 150-ton bridge truss crane at Boston.

Mr. ROBERTS. If this crane is used, and if you have a current, how do you hold your crane in position; is the pontoon stationary on the outboard side of your ship?

Admiral WATT. I have handled a floating crane of smaller size around ships, and by a proper arrangement of the fastening lines you can safely handle and control the pontoon on the outboard side of the ship.

Mr. ROBERTS. I was told in the Boston yard that the method of handling that crane was entirely different, that the crane is kept in a slip, that the ship is brought opposite the opening of the slip, that the crane is operated from the inboard side of the ship, the side of the ship from the shore. They do not take the crane out of the slip.

Admiral WATT. I am unfamiliar with the facts as to how this crane is handled in Boston. The procedure outlined by Mr. Roberts eliminates the advantages of a floating crane.

Mr. ROBERTS. Then, having gotten the weight on the crane, you had to remove the ship to another part of the yard, take the crane out, and get the weight ashore?

Mr. BRITTEN. What is the necessity of a ponton crane?

Admiral WATT. Shifting the ship instead of the crane would do away with one of the most important advantages of the floating crane. The condition Mr. Roberts speaks of arises, undoubtedly, from the difficulty of handling a float with a 270-foot projecting arm, because before this crane can be swung it must be in the center of a 270-foot circle. Otherwise this long projecting arm is going to sweep things right and left.

Mr. BRITTEN. A 270-foot right of way?

Admiral WATT. Yes, sir.

Mr. ROBERTS. On that type of crane the projecting arm is absolutely stationary?

Admiral WATT. The only revolution is by swinging the whole crane.

Mr. ROBERTS. There is no way of hoisting the arm?

Admiral WATT. No, sir.

Mr. ROBERTS. As I understand, the Panama Canal crane does hoist the arm so that when it is not in use there is nothing projecting beyond the line of the pontoon itself?

Admiral WATT. That is clearly indicated on figure 6. This jib can be revolved through 360 degrees and can be secured entirely within the projected area of the float. It requires 150 feet, as compared to the 270 feet required by the Boston bridge truss crane, for swinging.

The CHAIRMAN. About the expense of the maintenance of the hull of the pontoon of a floating crane, as compared with a track crane, is there much expense incident to the maintenance and preservation of the pontoon of a floating crane?

Admiral WATT. The cost of the maintenance of a pontoon of that type will not be great, because of our possession of dry docks.

The CHAIRMAN. Will you please describe fully and particularly the difference in the construction between the Panama Canal crane and the Boston or the New York crane, and the advantages and efficiency of each?

Admiral WATT. Yes, sir. Both types of crane are of the floating type. In other words, the crane is contained on a pontoon. In the Boston crane the weight is handled on a bridge truss, which is suspended from built-up steel A frames or girders. The Boston crane has a hoist which is materially less than the Panama Canal crane. It requires a very much longer space on the water front for its securing, and it requires a very much larger unobstructed area for its handling. Returning now to the Panama Canal crane—

Mr. BRITTEN (interposing). Admiral, before you return, for the benefit of the committee, do you not think it is wise to say that the

Boston crane can only operate or be operated on straight lines and does not revolve?

Admiral WATT. Yes, sir; I am glad you called my attention to that. The Boston crane operates only on a straight line. In other words, the weight is traversed in and out on this suspended bridge truss [indicating], and if you want to handle the weight outside the straight line you must again revolve the 1,500 or 2,000 ton float. In the Panama Canal crane you merely revolve the jib from which the weight is hanging. Now, the Panama Canal crane is similarly mounted on a float, and there is a column or pedestal which rises from the float, and in connection with this column or pedestal is fitted a roller ring, on which is supported the revolving jib. This revolving jib can be revolved through 360° and can be raised and lowered also.

Mr. BRITTEN. The revolving jib can be turned?

Admiral WATT. Through a complete circle.

Mr. BRITTEN. It can go right around?

Admiral WATT. Yes, sir; indefinitely.

Mr. BRITTEN. It does not have to return?

Admiral WATT. It does not have to retrace its path. It makes a complete revolution in eight minutes.

Mr. ROBERTS. With the maximum weight?

Admiral WATT. Yes, sir; with the maximum weight. It has a far greater hoist distance from the water to the point of the hook than the Boston crane.

Mr. BUCHANAN. Please give us those figures.

Admiral WATT. The Boston crane will only hoist 75 feet above water, whereas the crane that is actually under construction for the Panama Canal will hoist 135 feet above water.

The CHAIRMAN. Is there any necessity on a ship of lifting above 75 feet?

Admiral WATT. We think it is necessary to have a hoist of 90 feet for 150 tons. We do not need a hoist of 135 feet for the 150-ton weight, but we do want an auxiliary hoist of 130 feet to mount the top on the cage mast, but that is a light hoist only.

After carefully studying this subject, and knowing what we want to do, we consider that any crane of this type should have the following characteristics:

It should be capable of hoisting and rotating a weight of 150 tons, 2,240 pounds each—in ship work we always use the long ton—at an overhang of 62.5 feet beyond edge of crane float from 45 feet below water to a height of 90 feet above water (90 feet from crane hook to water).

The second requirement is to be capable of hoisting and rotating a weight of 25 tons (2,240 pounds each) at an overhang at 62.5 feet beyond edge of crane float, and at a height of 130 feet above water (130 feet from crane hook to water). The requirement in that case is to permit us to put one of the tops on the masts of the ship.

In hoisting above weights the crane jib—by which I mean this arm [indicating figure 9]—must be clear of the deck edge of a wall-sided ship when this deck edge is 40 feet above water. We do not require a crane of as great hoist as the Panama Canal crane. Consequently it would be possible with our crane to very much shorten this tower or pedestal [indicating].

Mr. BRITTEN. Will not that in itself give you increased lifting capacity?

Admiral WATT. If we hold everything else the same; yes, sir.

The CHAIRMAN. How much would it reduce the cost, taking off the 45 feet hoist?

Admiral WATT. I can not answer that question without careful estimating.

Mr. ROBERTS. You have to increase the length of your jib over the Panama Canal crane?

Admiral WATT. Yes, sir; we need the 5 feet additional outreach.

Mr. ROBERTS. All your structure will have to be correspondingly heavy?

Admiral WATT. Of course, as we cut down the hoist we cut down the upsetting moment and we will be thus able to provide for the 5 feet more outreach which we want to get.

Mr. WILLIAMS. You say that we only want a crane of sufficient dimensions to hoist to a height of 90 feet, and awhile ago you spoke of the necessity of hoisting 25 tons to a height of 130 feet.

Admiral WATT. Any crane that will hoist 150 tons to 90 feet can be so designed as to readily handle 25 tons at 130 feet.

Mr. WILLIAMS. It will be constructed so it can do that?

Admiral WATT. It will be so constructed that it can hoist and handle very heavy weights, and it will be so constructed with an auxiliary hoist that it will handle this lighter weight at a greater height.

Mr. BUCHANAN. In other words, it should be a 150-ton crane?

Admiral WATT. Yes, sir; we want a working crane of 150 tons. A crane possessing the above characteristics and containing a unit for the generation of power for operation of the crane at a point distant from the navy yard, could be obtained for \$450,000, and by reason of its great advantages the increased expense is well warranted.

Mr. BRITTEN. Would it not be also impossible to use the Boston crane to take a heavy turret off of one battleship and put it on to another while in the immediate vicinity, and would not that same operation be a very slight operation with the Panama Canal crane?

Admiral WATT. It would be a very slight operation with the Panama Canal crane, but if they are using the Boston crane, as Mr. Roberts described, it would be a very extended operation.

There is one point that I wish to emphasize. This floating crane becomes available for use anywhere within the inclosed body of water where it is stationed. At Norfolk we now have a small crane, which in the last three years has been twice towed up the Chesapeake Bay to the wreck of the *San Marcos*, the old *Texas*, and performed lifting work on this old wreck in connection with experimental work that we were doing. A properly equipped floating crane will not only satisfy the Norfolk Navy Yard, but it will satisfy Norfolk Harbor and Hampton Roads. It can be taken anywhere in Chesapeake Bay, and in the event, which we hope will never occur, of a submarine getting into trouble in Chesapeake Bay, this crane could be sent to that place and possibly render complete salvage assistance.

Mr. BROWNING. Do these cranes that you speak of use their own power?

Admiral WATT. I do not think the crane should be self-propelled. That is a refinement which it is not necessary to go into. We have tugs which can handle the cranes.

Mr. BROWNING. One of the cranes which you spoke of in foreign yards was a self-propelled crane?

Admiral WATT. I referred to a crane that was self-propelling, but I do not recommend this feature for a navy-yard crane. A navy-yard crane should have an electric generating unit so that if it were sent from the navy yard it could generate the necessary power for operation of the crane, but ordinarily it would connect with the power leads ashore and would use the cheaper power generated in a central power plant.

Mr. BUCHANAN. A crane with a carrying capacity of 150 tons, what would you consider the breaking strain?

Admiral WATT. The crane should be tested to at least 200 tons without any permanent deflection, or without straining the crane.

Mr. ROBERTS. This Panama Canal type of crane reaching 56 feet maximum when the jib is horizontal, can the weight be brought inboard with that crane, moving the jib?

Admiral WATT. No. There is no traverse on the jib. The shifting in and out is obtained by raising or lowering the arm.

Mr. ROBERTS. With the Boston type of crane it traverses back and forth on the arm?

Admiral WATT. The travel is back and forth on a straight line [indicating]. The Panama crane has a jib that can be lowered and raised and can be revolved through a complete circle.

Mr. ROBERTS. I want to get clear in my mind the exact operation of the two cranes. Assuming the case mentioned by Mr. Britten, removing a heavy weight from one ship to another or from one ship to the dock, with the Boston crane, as I am told, the process is to bring the ship alongside the end of the slip of this fixed cantilever or jib or bridge truss, as you may call it, and the weight is then taken from the ship and run inboard and then the weight is run out and dropped. If you have your rotating jib, you bring your crane alongside the ship and you take the weight off, you do not have to move the ship or the float, you simply rotate the jib and drop your weight anywhere within the radius of the jib?

Admiral WATT. Yes, sir.

Mr. BRITTEN. You drop the weight on the float?

Admiral WATT. You can land the weight on the crane float or you can carry it suspended. For instance, suppose we were shifting 14-inch guns. We would take this float to the sea wall and pick up several of the 14-inch guns, landing them on the float; we would tow this crane to the ship, and then we would reach over the ship and pick up one of the guns to be removed from the turret and land it on the float. We would then pick up one of the good guns from the float and land it in position in the turret.

Mr. BRITTEN. Almost a delivery wagon?

Admiral WATT. Yes, sir. It can be done in a very few minutes.

Mr. BRITTEN. Which bureau will draw the specifications for the construction of the crane?

Admiral WATT. The Bureau of Yards and Docks is the bureau charged with that responsibility. They prepare the specifications for this work.

Mr. ROBERTS. What is the design, so far as they have agreed on a design, for the Norfolk crane which we authorized?

The CHAIRMAN. I called up Admiral Stanford on Saturday, I believe it was, and he said to me that the matter was in the Secretary's office and had not yet been passed upon.

Mr. ROBERTS. The design has not been passed upon?

The CHAIRMAN. Yes, sir.

Mr. ROBERTS. The design has been sent to the Secretary to be passed on?

Admiral WATT. Yes, sir. When this question arose the chief of the Bureau of Yards and Docks asked me what type of crane was needed and I replied with the specifications which I read, and which will appear in the hearings. After investigation it was found that the authority of \$300,000 was not enough to get the type of crane that I felt was necessary. Then the question was investigated as to what could best be done. I urged against a repetition of the Boston crane, and the crane on which the specifications are now before the department is the best crane which can be obtained within the authorized limit of \$300,000—while one type of crane may have its advantages—

Mr. ROBERTS. Have you a sketch?

Admiral WATT. Yes, sir. I can show it to you. Turn to figure 6.

Mr. ROBERTS. Electrically operated floating crane for Panama Canal?

Admiral WATT. Yes, sir. Taking the crane indicated therein for the Panama Canal, the crane which is now before the department will possess the feature of raising the jib to the position of the upper set of lines, so that the lifting boom will be contained entirely within the area of the float, but it is not possible to provide any revolution and this crane would possess the serious disadvantage of necessitating the swinging of the float instead of revolving the boom. Exactly the same reasoning applies to this feature of the crane as applies to the use of the floating crane itself. You can handle a floating crane so much more simply than you can handle a heavy ship, and you can similarly rotate a boom on which the weight is suspended so much more simply than you can rotate or swing this big crane float.

Mr. ROBERTS. Can a crane of the type purchased for the Panama Canal be obtained for \$300,000?

Admiral WATT. It can not.

The CHAIRMAN. What is going to be the material advantage or difference between this proposed Norfolk crane and the Boston crane so far as the efficiency in handling heavy weights is concerned?

Admiral WATT. The type of crane now under consideration by the department for Norfolk can house its jib entirely within the area of the float instead of having a 70-foot arm projecting beyond the float at each end,

The CHAIRMAN. It has a smaller yardarm on either side?

Admiral WATT. You cut out the projecting cantilever arm and substitute a lifting jib which can be stowed inside the float.

The CHAIRMAN. It can not be revolved except as you revolve the float?

Admiral WATT. It revolves exactly as does the Boston crane—by swinging the float.

Mr. ROBERTS. Would you recommend the construction of that type of crane (fig. 6) for Norfolk, or anywhere, for that matter?

Admiral WATT. Personally, I think that all of our first-class navy yards should have one of the electrically—

Mr. ROBERTS (interposing). I am not asking if you would recommend this kind of a crane.

Admiral WATT. The kind that is now under consideration for Norfolk?

Mr. ROBERTS. Yes, sir.

Admiral WATT. It would be a great deal better than the facilities we now have. If we can not get the necessary authority for the better type of crane, I should say go ahead with that crane.

Mr. ROBERTS. Do you think it is good administration and good economy to put \$300,000 into an inefficient crane when by putting in more money you can get a crane to meet all of your requirements?

Admiral WATT. I most certainly do not, sir.

Mr. BRITTEN. Do I understand that the Bureau of Yards and Docks is contemplating the construction of one of these cranes that is not a revolving crane?

Admiral WATT. Yes, sir; the limit of cost fixed by Congress will not permit incorporating the revolving feature.

Mr. BRITTEN. I have had some little experience with cranes and derricks, and unless the committee decides in favor of a complete revolving pontoon crane I do not think that we should go ahead with any, because a makeshift would simply have to be supplemented another year.

The CHAIRMAN. This crane was authorized last year, and an appropriation of \$100,000 made, and the question is whether or not we will reconsider that matter and authorize in this bill an amount sufficient in addition to provide for a revolving crane, and it was for that purpose that we had the admiral appear before the committee.

Mr. FARR. How much additional?

The CHAIRMAN. About \$150,000.

Mr. FARR. Has the work been begun?

The CHAIRMAN. No, sir: no obligations have been incurred as yet. The matter is now before the Secretary for consideration.

Mr. BRITTEN. Is it possible to draw plans and specifications for a pontoon crane of this design and to supply the revolving portion at this point [indicating] instead of at the base?

Admiral WATT. My idea would be to so prepare the specifications as to provide the widest latitude to crane designers and insure that we would get the cheapest crane that would fill the requirements.

Mr. BRITTEN. You speak about drafting your specifications. I asked you a moment ago who drafted the specifications for the Boston crane. Who is responsible for its presence?

Admiral WATT. The Bureau of Yards and Docks is responsible for crane specifications. In connection with the type of crane proposed for Norfolk, the Bureau of Yards and Docks consulted frequently with the Bureau of Construction and Repair as to just what the crane was to be and what it was to do.

Mr. BRITTEN. The Norfolk crane?

Admiral WATT. Yes, sir. If the committee authorized an increase in the authorization to \$450,000, I feel sure that the Bureau

of Yards and Docks will provide a crane of the type I am urging upon the committee.

Mr. BRITTEN. It will not be another Boston proposition?

Admiral WATT. I feel very sure it will not be.

Mr. ROBERTS. Have you stated heretofore what 150-ton cranes we have in the service or under construction? In other words, one crane similar to the Boston crane is now being constructed for Pearl Harbor?

Admiral WATT. There are four cranes similar to the Boston yard crane.

Mr. ROBERTS. On the same principle?

Admiral WATT. On the same principle; yes, sir.

Mr. ROBERTS. That contract has perhaps gone so far that nothing can be done about it?

Admiral WATT. Yes, sir.

The CHAIRMAN. My recollection is that we authorized a 150-ton crane for Pearl Harbor; that we increased it. In 1911 we increased it to a 150-ton crane.

Mr. WITHERSPOON. How many of the 150-ton cranes have we now?

Admiral WATT. We have one at Puget Sound, one at Pearl Harbor, one at Boston, and we have a 125-ton crane at New York.

Mr. WITHERSPOON. We have four?

Admiral WATT. Yes, sir.

The CHAIRMAN. And the one authorized for Norfolk.

Mr. WITHERSPOON. That is five, including the Norfolk crane. We have nine navy yards. Do we need four cranes at the other navy yards?

Admiral WATT. We need a crane of this type at every navy yard on which a battleship division is based.

Mr. WITHERSPOON. You can not replace one of these guns which is worn out and has to be relined with a new gun at any navy yard unless you have one of these cranes?

Admiral WATT. Yes, sir. You can rig up temporary arrangements. You could take several stout masts and rig up a pair of sheer legs. It would be a very difficult, slow, and dangerous operation, taking weeks really to shift the guns of a ship.

Mr. WITHERSPOON. How much of the time is this 150-ton crane at Boston in actual use?

Admiral WATT. I can not answer that question. At the New York yard last year we removed and replaced 30 turret guns.

Mr. WITHERSPOON. How long did it take to do that?

Admiral WATT. The actual lifting of guns would not take very much time.

Mr. WITHERSPOON. About how long, six months?

Admiral WATT. I think, with proper appliances, you could remove and replace the turret guns of a ship in about two weeks. The guns shifted at New York were the guns for three ships. This crane, of course, was in use for handling other things, handling engine parts, etc. I think I can safely say that there is not a day goes by when the crane is not handling something. In addition to possessing this 150-ton purchase it possesses a smaller purchase, which is a very great convenience.

Mr. WITHERSPOON. Each of the five 150-ton cranes that we have now is handling something every day in the year?

Admiral WATT. No, sir; I would not say every crane is so engaged, but at the New York yard, which, of course, is the largest navy yard, I think that is the case.

Mr. WITHERSPOON. I asked you about the Boston yard.

Admiral WATT. I do not know, but it is not in operation nearly as much as the crane in New York or as the crane at Norfolk would be.

Mr. WITHERSPOON. If all of this work of replacing these turrets and guns was done at one yard, how many of these 150-ton cranes would it take to do it?

Admiral WATT. I think if all the work could be done at one navy yard one crane might do it, but I do not think that it would be possible to do all the work at any one navy yard we have at present. You would have interference with the other activities of the yard.

Mr. WITHERSPOON. How many navy yards has Japan?

Admiral WATT. She has numerous yards.

Mr. WITHERSPOON. Do you know how many?

Admiral WATT. I can ascertain and put it in the record.

Mr. WITHERSPOON. Do you know how many Germany has?

Admiral WATT. I can ascertain.

Mr. WITHERSPOON. And England and France. Please put in the record how many navy yards each one of those countries maintains.

Admiral WATT. In reply to the inquiry as to navy yards of foreign countries, I am informed by the Director of Naval Intelligence as follows:

Japan (total, 8):

First class—

Yokosuka.

Kure.

Sasebo.

Maizuru.

Chinkai (building).

Second class—

Bako (Pescadores).

Ominato.

Port Arthur.

Germany (total, 4):

First class—

Kiel.

Wilhelmshaven.

Second class—

Danzig.

Tsingtau.

France (total, 7):

First class—

Cherbourg.

Lorient.

Brest.

Toulon.

Second class.

Rochefort.

Bizerta (Tunis).

Saigon.

Great Britain (total, 17):

First class—

Davonport (Keyham).

Portsmouth (Gosport, Haslar, Eastney, Bedenham).

Rosyth (building).

Great Britain—Continued.

Second class—

Pembroke.
 Falmouth.
 Chatham (Sheerness).
 Haulbowline.
 Crimsby.
 Malta.
 Gibraltar.
 Hongkong.
 Esquimaux (Canadian).
 Simon's Bay.
 Bermuda.
 Halifax (Canadian).
 Sydney (Australian).

Mr. WITHERSPOON. We have nine navy yards, have we not?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. You think if all this particular work that we have been talking about was done at one navy yard, one crane might do it all?

Admiral WATT. I think one crane of this capacity working eight hours a day could do all of the lifting that is done in all the yards. It would involve delays, of course, because the prosecution of work would depend upon the availability of the crane, instead of the crane being available at the exact time required in the orderly prosecution of work.

Mr. WITHERSPOON. How many other cranes have we in the navy yards?

Admiral WATT. The appliances we have spoken of are practically all the heavyweight handling appliances we have except that at the Norfolk yard there is a floating derrick, a steel A frame built on a wooden hull. The maximum capacity of this crane is a 12-inch gun, and many a time in handling a 12-inch gun I have wondered whether or not I was going to succeed. You lift a gun with the Norfolk crane and while it is hanging suspended you have to shift the water ballast before you can swing the boom, and it takes a very long time to do that. These cranes are the only heavyweight handling appliances we have. Many years ago every navy yard had a pair of sheer legs, but these sheer legs have gradually been replaced by these devices, necessarily on account of the increase in weight handled.

Mr. WITHERSPOON. Did you mean to say awhile ago that these 150-ton cranes were all the cranes we had?

Admiral WATT. Those are the appliances we have for handling heavy weights.

Mr. WITHERSPOON. That is not what I asked you.

Admiral WATT. I thought we were discussing heavy weights.

Mr. WITHERSPOON. How many cranes have we in all the yards?

Admiral WATT. We have a great many. Practically every machine shop has one or more cranes. The New York yard has an overhead traveling cantilever crane for handling materials in shipbuilding. The Mare Island Navy Yard has a similar crane for handling materials in shipbuilding.

Mr. WITHERSPOON. Some of these cranes are run on railroads—run from one part of the yard to another?

Admiral WATT. Every dry dock has a 40-ton crane traveling around it. All the yards have small locomotive cranes of 5 to 15 tons capacity.

Mr. WITHERSPOON. Every navy yard has to be supplied with them?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. If you had one navy yard, the cranes in one of the yards could do all of the work?

Admiral WATT. No, sir; I do not think so—not at all.

Mr. WITHERSPOON. How is that? I have seen all of the navy yards from Panama to Frenchmans Bay and I did not see any crane that was in use. Was that just an accident?

Admiral WATT. I think that was an accident; yes, sir.

Mr. WITHERSPOON. They just happened to be idle because the committee was coming along.

Mr. LEE. I do not think that occurred at Philadelphia.

Mr. BRITTEN. Judge Witherspoon a few moments ago was trying to locate the cause or the responsibility for the inefficient crane at Boston. If this committee recommends an appropriation of only \$300,000 and the Bureau of Yards and Docks or your bureau goes ahead with the plans and specifications for a crane such as you had in mind before we questioned you, will not we ourselves be responsible for another state of affairs like the existing one?

Admiral WATT. I think the gentlemen of the committee can answer that question better than I can.

The CHAIRMAN. The department always presents the limit of cost in the estimates?

Admiral WATT. I think so; yes, sir.

Mr. WILLIAMS. Will these two cranes for the Panama Canal be permanently required at that place?

Admiral WATT. Inquiry would have to be made of the Panama Commission as to that; I feel sure, however, that they will be required.

Mr. WILLIAMS. Can they be used elsewhere and for other purposes than the purposes for which they have been ordered?

Admiral WATT. That is one of the great advantages of floating property. These cranes are going to be built in Germany and taken to the Panama Canal. They could be taken to other places.

Mr. WILLIAMS. What is their use on the Panama Canal?

The CHAIRMAN. At either end of the canal and up and down the canal.

Mr. WILLIAMS. For what purpose?

The CHAIRMAN. Lifting weights and handling the lock gates.

Mr. WILLIAMS. Will they probably be required there continually?

Admiral WATT. Yes, sir.

Mr. WILLIAMS. Can they be utilized for this other purpose, loading and unloading guns, as well as in the operation of the canal?

Admiral WATT. Yes, sir.

Mr. BROWNING. Would the War Department loan them to us?

Admiral WATT. I think if we had a ship at Panama we would have no trouble in getting the services of the crane.

Mr. ROBERTS. Did I understand you to say that we have nine navy yards?

Admiral WATT. Yes, sir.

Mr. ROBERTS. I would like to have you count them.

Mr. WITHERSPOON. I counted them last night.

Admiral WATT. Portsmouth, Boston, New York, Philadelphia, Washington, Norfolk, Charleston, Mare Island, and Puget Sound.

Mr. ROBERTS. You do not figure Pearl Harbor?

Admiral WATT. I have not.

Mr. ROBERTS. In answer to one of Judge Witherspoon's questions, I understood you to say that we need one of these 150-ton cranes at every yard that is a base of a battleship division.

Admiral WATT. Yes, sir.

Mr. ROBERTS. How many of the nine yards which you have enumerated are bases for battleship divisions?

Admiral WATT. Boston, New York, Philadelphia, Norfolk.

Mr. ROBERTS. Is not Bremerton?

Admiral WATT. It will be after the canal is finally completed.

Mr. ROBERTS. Then, you have four yards on the Atlantic coast and probably one on the Pacific coast?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. What is meant by a base of a battleship division?

Mr. ROBERTS. The repair station for the ships.

Admiral, we have authorized now five of these 150-ton cranes, so that if they are properly placed the fifth one will meet the requirements of the Navy at the present time?

Admiral WATT. I think the time is coming when Philadelphia will have to have one of these cranes.

Mr. ROBERTS. If Bremerton is made a base she will need one?

Admiral WATT. We have one there.

Mr. ROBERTS. Will you need one at Pearl Harbor?

Admiral WATT. We have one for Pearl Harbor, Puget Sound, New York, and Boston,

Mr. ROBERTS. The only yard that is a repair station for battleships, a base for battleships, without a crane, is Philadelphia?

Admiral WATT. There are two yards that to-day have not the proper cranes—Norfolk and Philadelphia.

Mr. ROBERTS. We have provided one for Norfolk?

Admiral WATT. Yes, sir.

Mr. ROBERTS. So that in the future the probabilities are that we will only be asked for another crane of this kind for Philadelphia?

Admiral WATT. I should say so; yes, sir.

Mr. ROBERTS. Practically only one more crane of this type?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. That will make, in all, six?

Admiral WATT. Yes, sir.

Mr. WITHERSPOON. When we get the six, according to your statement, we will have cranes that can do six times as much work as needed?

Mr. LEE. Judge Witherspoon asked you as to combining all the navy yards on the Atlantic coast. Do you know of any navy yard on the Atlantic coast that is large enough to do the work of all the navy yards?

Admiral WATT. I do not.

Mr. LEE. Has Philadelphia water front enough and berthing space for that purpose?

Admiral WATT. I do not think it would be possible to establish at any one of these places a yard that could do the work of the entire fleet.

Mr. LEE. Do you not know that we have berthing space enough at Philadelphia to accommodate practically the entire fleet, that is, if it were necessary?

Admiral WATT. I think I have heard that statement; yes, sir.

Mr. LEE. Is it not a fact that we have more area at the Philadelphia Navy Yard than all of the navy yards of Great Britain?

Admiral WATT. I do not know.

Mr. LEE. Please make inquiry and put that in the record.

Admiral WATT. I will try to secure that information.

I am informed by the Director of Naval Intelligence, with respect to this matter, as follows:

The Philadelphia Navy Yard has not more area than all the navy yards of Great Britain.

Area.

	Acres.
Philadelphia Navy Yard.....	824
Chatham.....	516
Devonport.....	300+
Portsmouth (does not include Gosport, Haslar, Eastney, or Bedenham).. <td style="text-align: right;">200+</td>	200+
Total area.....	1, 016+

Mr. FARR. Could we concentrate the work in two or three yards?

Admiral WATT. After many years of experimentation the Navy Department has arrived at a policy of basing a division of battle-ships on one navy yard, and I think I can say that the results are extremely satisfactory to the Navy Department. The ships go to a yard in rotation, and repairs are taken up and completed expeditiously. The men and their families know where a ship is going when it is sent to a navy yard. The present system has worked out to an increase in contentment of the officers and men aboard ship; also to expeditious repair work, and all around generally satisfactory results.

Mr. WILLIAMS. In your opinion, Admiral, would not one complete, comprehensive navy yard on the Atlantic coast and on the Pacific coast answer every purpose and meet every suggestion that you have just offered?

Admiral WATT. It might be possible to concentrate this work in, say, two large and properly equipped stations on each coast, but not in any two existing stations on either east or west coast. I think it would be impossible to do it in one station.

The **CHAIRMAN.** Ought not the questions of military and strategic advantages, etc., to be considered in the location and maintenance of the yards?

Admiral WATT. Very decidedly so, sir.

Mr. WITHERSPOON. You said that the crane would be carried across the ocean. How is that done, by tugs?

Admiral WATT. The pontoon would be towed across, and I imagine the machinery would be transported on a steamer and erected at Colon.

Mr. WITHERSPOON. Does not that show that they can not remove it from place to place?

Admiral WATT. I would not advise towing this crane ready for service on the high seas; no, sir; but of course you could dismantle the crane, carry the parts on a steamer, and tow the float or pontoon.

The CHAIRMAN. But to dismantle and remantle would be a very expensive operation.

Admiral WATT. Yes, sir.

Mr. BRITTEN. It would not be a very serious matter to tow the pontoon with the jib taken down?

Admiral WATT. I would not want to tow that crane on the high seas even in that condition. It could be done if you selected your weather and got the weather you anticipated, but it would not be a wise thing to undertake.

The CHAIRMAN. Admiral, we have very much enjoyed having you with us this morning.

Admiral WATT. I thank you, Mr. Chairman.

(Thereupon, the committee adjourned to meet to-morrow, Wednesday, January 28, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Wednesday, January 28, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF REAR ADMIRAL C. E. VREELAND OF THE
 GENERAL BOARD.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning Admiral Vreeland, one of the members of the General Board. Admiral Dewey, the president of the board, on account of not being well—threatened with grippe, as I understand it—is confined to his room, and not being able to appear before the committee, Admiral Vreeland appears as the representative of the General Board.

Admiral Vreeland, the other day the committee were discussing the naval bill, and some of the members of the committee expressed a desire that a representative of the board should come before the committee and submit the views relative to the state of the Navy and its recommendations for a building program. The committee will be glad to hear any suggestions which you wish to offer, Admiral.

ADMIRAL VREELAND. Mr. Chairman and gentlemen of the committee, since 1903 the General Board has advocated 48 battleships, and I think the reason for advocating the 48 battleships is misunderstood somewhat. I have heard many people say that that means you will have one ship for each State in the Union. At that time the Union did not possess 48 States, and if we should by chance have 50 States, taking in Alaska and Porto Rico, the General Board will not for that reason ask for 50 battleships. The reason for advocating 48 battleships is that the General Board studies what is going on abroad and the development abroad led to the adoption of that number.

The impression prevails that the General Board recommends now and has always recommended an annual and ever-continuing building program of 4 battleships with accompanying lesser units and auxiliaries. A brief analysis of the recommendations made by the General Board beginning with the original formulation of its policy in 1903 to the present time will demonstrate the error of this impression and show that the recommendations made were all consistent and related to the creation of a battleship fleet of 48 vessels by 1920, and did not involve a constant and fixed program of building 4 battleships a year.

In October, 1903, the condition of the Navy in battleships was 10 battleships completed and 14 authorized, the last of these 14 to be completed by 1907. In view of this condition and to complete a fleet of 48 battleships in 1919 the General Board in paragraph 8 of its letter of October 17, 1903, recommended:

To sum up, the General Board recommends that Congress be requested to authorize for the present a yearly building program, not limited by the amount appropriated last year, composed of the following ships: Two battleships, etc.

To this letter was appended the following table, showing what the condition of the Navy would be in battleships, year by year to 1919, starting with the 10 completed and 14 already authorized and following a 2-battleship-per-year program from 1904:

Year.	Battleships.		Year.	Battleships.	
	Completed.	Authorized.		Completed.	Authorized.
1903.....	10	14	1912.....	34	2
1904.....	12	2	1913.....	36	2
1905.....	17	2	1914.....	38	2
1906.....	19	2	1915.....	40	2
1907.....	24	2	1916.....	42	
1908.....	26	2	1917.....	44	
1909.....	28	2	1918.....	46	
1910.....	30	2	1919.....	48	
1911.....	32	2			

It will be seen from the foregoing table that the General Board's recommendation provided for a 2-battleship program consistently pursued from 1904 to 1915 to provide a fleet of 48 battleships in 1919. In these recommendations replacements were not considered, nor had limits of age been placed on battleships. The fundamental idea, however, was a 2-battleship program to provide a fleet of 48 battleships. A larger program to hasten the completion of the fleet had been considered; but had been rejected in consideration of the fact that a fleet of 48 battleships by 1919 would answer all needs, in view of the known building programs of other countries.

In pursuance of this policy, the General Board, as stated above, began its yearly recommendations by asking that 2 battleships be authorized in 1904; and the following table will show clearly the succeeding yearly programs recommended, and the reasons therefor:

Year.	Number of battleships—		Year.	Number of battleships—	
	Recommended by General Board.	Authorized by Congress.		Recommended by General Board.	Authorized by Congress.
1904.....	2	1	1909.....	4	2
1905.....	3	2	1910.....	4	2
1906.....	3	1	1911.....	4	2
1907.....	2	1	1912.....	4	1
1908.....	4	2	1913.....	4	1

The recommendation for the laying down of 2 ships in 1904 failed of enactment, and only one was provided for, leaving the program for the creation of a 48-battleship fleet by 1919 one ship in arrears. To make this deficiency good and maintain the general program, one additional ship, or 3 in all, were recommended for the 1905 program. Two were authorized, still leaving a deficiency of one for the two years, 1904, 1905. To provide for this 3 were again recommended for the 1906 program. In 1906 and again in 1907 one ship only was authorized, leaving by 1908 the general program 3 ships in arrears. To begin making this deficiency good, the General Board

for the 1908 program recommended the laying down of 4 ships. From 1908 to 1911, inclusive, Congress followed the original program and provided for 2 battleships yearly. The accumulated shortage of 3 ships still remained, however, during these four years; and the General Board recommended year by year the laying down of 4 ships to begin making this good, since each succeeding year found the shortage still there.

From this period a new element entered, not considered in the original program. The fleet of 48 battleships contemplated in the program put forward in 1903, on a 2-battleship per year building program, to be ready in 1919, contained all battleships then borne on the list, beginning with the *Indiana*. Experience had not yet in 1903 demonstrated the effective life of battleships, nor had any exhaustive study been made of it. Beginning with the program recommended for 1911, this matter was seriously taken into consideration, since experience had shown that the 3 older battleships, then 20 years old from date of authorization, were approaching their limit of usefulness. Further studies from our own experience and from that of other navies and from practice abroad convinced the General Board that the effective life of battleships is about 20 years from time of completion; and that, hence, to maintain a fleet at a given strength it is necessary to lay down a replacement ship 20 years from the time of the laying down of the original ship. Hence, replacement ships for the *Indiana*, *Oregon*, and *Massachusetts* should have been laid down in 1910, for the *Iowa* in 1912, and new replacement ships should be begun for the *Kentucky* and *Kearsarge* in 1915. These matters, together with the shortage of 3 battleships already existing in 1911, were taken into consideration by the General Board in making its recommendations for a 4-battleship program in both 1912 and 1913. One battleship only was provided for in each of these two years, increasing the shortage in the original program to 5, without considering replacement ships for the *Indiana*, *Oregon*, *Massachusetts*, and *Iowa*, already overdue for authorization.

The preceding analysis shows clearly the error in the prevailing impression that the General Board advocates or has advocated a Navy based on a continuous building program of 4 battleships a year. Such a building program, with a 20-year life of ship, would maintain an effective fleet of 80 battleships in the first and second line, which is far beyond anything that has been proposed or advocated by the General Board. What the board has advocated, and still advocates, is an effective fleet of 48 battleships; and each of its recommendations that have gone in since 1903 have looked to the attainment of this fleet before 1920; and under a consistent building program would have called for a 2-battleship per year regular building program, with a third ship added every three years on account of the limited effective life of ships.

NOTE.—In the President's annual message of December 4, 1906, referring to the naval program to be appropriated for in 1907, the President stated:

"I do not ask that we continue to increase the Navy. I ask merely that it be maintained at its present strength; and this can be done only if we replace the obsolete and outworn ships by new and good ones, the equals of any afloat in any navy. To stop building ships for one year means that for that year the Navy goes back instead of forward."

The General Board, acting on this principal laid down by the President of no increase to the Navy as then existing, in its recommendations made in October, 1906, for the building program to be authorized in 1907, asked for only two battleships. This was

the only instance in which the General Board has deviated from its fixed policy of making recommendations which would provide a fleet of 48 battleships completed by 1920, and this variation was made to accord with the announced policy of the President of the United States of no increase in the Navy, as shown in the quotation above.

Germany is the one great nation possessed of a fixed, definite policy, and their navy laws are fully known and set forth their aims. Under these laws a fleet has been systematically created that in 1920 is to consist of 41 battleships and 20 large cruisers with proportional lesser units.

Mr. HENSLEY. By what date, Admiral?

Admiral VREELAND. By 1920.

The CHAIRMAN. What are the others?

Admiral VREELAND. The others are partly battle cruisers and partly armored cruisers. The program does not state so explicitly, but it is undoubtedly the purpose of the German administration to replace the armored cruisers year by year with battle cruisers, so that eventually, about 10 years from that date, 1930, she will possess a fleet of 61 capital ships. With the capital ships there go smaller vessels for foreign service, and, which is very important, 144 destroyers. Latterly they have taken up the submarines, and they purpose having just one-half that number, 72.

Mr. BROWNING. How many?

Admiral VREELAND. Seventy-two.

Mr. BRITTEN. You are talking about the German Government?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. In that connection, Admiral, if I may be permitted, I wish to ask you a question. Has anything occurred in Germany recently that, to your mind, may occasion a variance from carrying out this program?

Admiral VREELAND. Has anything occurred in Germany?

Mr. HENSLEY. Yes, sir; that would lead us to believe that they will perhaps vary from the policy laid down?

Admiral VREELAND. Whatever variation there may be will make toward an increase.

Mr. HENSLEY. Have they not quite a campaign now, a fight over the proposition as to whether they are going to pay the taxes this year? You are advised of that?

Admiral VREELAND. I do not think there is any serious fight. They talk a great deal and then vote just exactly as told.

Mr. HENSLEY. By whom?

Admiral VREELAND. By the Government.

Mr. HENSLEY. The Krupp interests, etc.?

Admiral VREELAND. Possibly they have something to do with it, but that does not appear in the vote.

Mr. FARR. Carrying out the policy of the German Government?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. They have had some difficulty to secure sufficient votes to carry that?

Admiral VREELAND. There was a special nonrecurrent expense of \$250,000,000 for the increase of the Army this year, and there will be an increased tax for the Navy.

Mr. HENSLEY. The taxpayers there are vigorously protesting against this sort of policy?

Admiral VREELAND. Yes, sir; but they vote for the battleships every time.

Mr. ROBERTS. You spoke a moment ago of the German policy of replacing the armored cruiser with the battle cruiser. Just what is a battle cruiser?

Admiral VREELAND. A battle cruiser is a ship that is ready to take its place in the line of battle, yet differs from the battleship. The battle cruiser carries fewer guns, but those guns are of the same caliber as on the battleship. It carries less armor. The armor is not of the thickness that it is on the battleship. It is probably of the same extent, but not so heavy. In return for these sacrifices of armor and armament they gain speed. Their belief, apparently, is that having a certain number of vessels of superior speed will give them an advantageous tactical position in an engagement.

Mr. ROBERTS. What speed do they get with their battle cruisers—what is the maximum?

Admiral VREELAND. The maximum published is about 30 knots. I should say 28 knots is battle-cruiser speed.

Mr. ROBERTS. What is the maximum speed of the best German battleship?

Admiral VREELAND. Not more than 22 knots.

Mr. ROBERTS. That is about the maximum of our best battleship?

Admiral VREELAND. Twenty-one knots.

Mr. ROBERTS. Twenty-one and a fraction knots?

Admiral VREELAND. Our ships usually make a little more than designed speed.

Mr. ROBERTS. What is the Japanese policy with regard to these battle cruisers?

Admiral VREELAND. The Japanese are building both battle cruisers and battleships.

Mr. ROBERTS. In what proportion?

Admiral VREELAND. At the present time they have in their navy two dreadnoughts and one battle cruiser completed and four dreadnoughts and three battle cruisers under construction.

Mr. ROBERTS. How does the cost of a battle cruiser compare with the cost of a battleship?

Admiral VREELAND. It is about the same; if anything, more for the same displacement.

Mr. ROBERTS. I had the impression, I think it was stated by some officer here, that the battle cruiser was considerably more expensive.

The CHAIRMAN. The estimates submitted by Secretary Meyer two years ago, I think they appeared in the hearing, showed, perhaps, 30 or 40 per cent greater cost.

Mr. ROBERTS. How do the battle cruisers of the Germans and Japanese compare in size, length, and tonnage with battleships?

Admiral VREELAND. About the same in tonnage; the battle cruiser has somewhat finer lines.

Mr. ROBERTS. In other words, as you state, it is practically a battleship with more speed and less armor and armament?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. The size is about the same?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. The cost of operating a battle cruiser at that high speed is almost much greater than operating a battleship?

Admiral VREELAND. Naturally; but they do not always go at high speed.

The CHAIRMAN. The machinery to go into a battle cruiser to produce that speed must be much more powerful and cost more!

Admiral VREELAND. It does.

Mr. ROBERTS. How do they get the speed, with turbines or with reciprocating engines?

Admiral VREELAND. Turbines. Everything abroad is turbines, and certainly everything that goes above 21 knots.

Mr. ROBERTS. How about operating those battle cruisers at cruising speeds—are they economical?

Admiral VREELAND. Our experience has been that they are not, but in conversation with officers of the British service—all their dreadnoughts have the turbine engines—it was stated that at cruising speed there is little difference between the reciprocating and the turbine engines.

Mr. ROBERTS. I saw it stated somewhere, not a great while ago, that England is abandoning the idea of enormous battleships, and going back to the smaller type of ship. Have you any information on that?

Admiral VREELAND. No, sir; I saw the statement.

Mr. ROBERTS. There is no basis for that publication so far as our Government knows?

Admiral VREELAND. No.

Mr. ROBERTS. What is your opinion—that they will?

Admiral VREELAND. I do not think they will do it.

Mr. ROBERTS. You do not think they will go back?

Admiral VREELAND. I do not.

Mr. ROBERTS. You think that the tendency will be to build even larger ships?

Admiral VREELAND. Yes, sir.

Mr. BRITTEN. Have you any idea as to how large they will ultimately be in length and beam?

Admiral VREELAND. No, sir.

Mr. BRITTEN. The locks in the Panama Canal are built for 110 feet?

Admiral VREELAND. That limits our construction, but it does not limit the construction abroad.

Mr. BROWNING. Is the armor on an armored cruiser of the same thickness as the armor on a battleship?

Admiral VREELAND. No, sir; it is much less.

Mr. BROWNING. And you say that on the battle cruiser it is still less?

Admiral VREELAND. It is between the two.

Mr. WILLIAMS. Are there not locks in the Suez Canal?

Admiral VREELAND. No, sir.

Mr. WILLIAMS. No locks whatever?

Admiral VREELAND. No, sir.

Mr. WILLIAMS. There are no locks to limit the size of the ships?

Admiral VREELAND. No; but there is the limitation of the water in the channel. They are improving that all the while, keeping pace with the advancement in marine construction.

Mr. ROBERTS. The only limitation in the Suez Canal at the present time would be the draft.

Mr. BROWNING. What is the speed of our armored cruisers?

Admiral VREELAND. About 22 knots.

Mr. BROWNING. And with the battle cruiser you expect 30 knots?

Admiral VREELAND. Twenty-eight to thirty. Our armored cruisers are of a comparatively old date.

Mr. BROWNING. If we built an armored cruiser now it would be of much greater speed than the present cruiser?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. Admiral, taking into consideration all of the utilities and value, the advantages and disadvantages of a battleship and a battle cruiser of equal tonnage, which is the better ship and which is the one to be preferred?

Admiral VREELAND. The battleship. That is a very much discussed matter.

Mr. ROBERTS. The other maritime nations are not building armored cruisers now?

Admiral VREELAND. No, sir.

Mr. ROBERTS. If they are building anything of the armored type it is the battle cruiser?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. Is England building any armored cruisers now, and Japan?

Admiral VREELAND. No; Japan certainly not. England, no. None of the leading naval powers is building this type.

Mr. ROBERTS. And our General Board has rather given up the idea of armored cruisers?

Admiral VREELAND. Wholly.

Mr. HENSLEY. Admiral, will you please give, for my benefit especially, a history of the General Board and how it came to be created and for what purpose, and so on, if by act of Congress or otherwise?

Admiral VREELAND. It was created by a regulation and its composition is stated in the regulation.

Mr. HENSLEY. Will you please put the regulation in the record?

Admiral VREELAND. I will.

(The regulation referred to is as follows:)

SECTION 7.—THE GENERAL BOARD.

[U. S. Navy Regulations, 1913.]

166. (1) The General Board shall be composed of the Admiral of the Navy, the Aid for Operations, the Aid for Material, the Director of Naval Intelligence, the President of the Naval War College, and such additional officers as the Secretary of the Navy may designate.

(2) An officer above the grade of lieutenant shall be detailed as secretary to the General Board. He shall record its proceedings and have charge and custody of its files and correspondence.

167. (1) The General Board shall devise measures and plans for the effective preparation and maintenance of the fleet for war and shall advise the Secretary of the Navy as to the disposition and distribution of the fleet and of the reinforcements of ships, officers, and men of the Navy and Marine Corps.

(2) It shall prepare and submit to the Secretary of the Navy plans of campaign, including cooperation with the Army and the employment of all the elements of naval defense, such as the Naval Militia, Coast Survey, Lighthouse service, Revenue-Cutter Service, and merchant vessels, and shall constantly revise these plans in accordance with the latest information received.

(3) It shall consider the number and types of ships proper to constitute the fleet, the number and rank of officers, and the number and ratings of enlisted men required to man them, and shall advise the Secretary of the Navy respecting the estimates therefor (including such increase as may be requisite) to be submitted annually to Congress.

(4) It shall advise the Secretary of the Navy concerning the location, capacity, and protection of fuel depots and supplies of fuel, and of navy yards and naval stations; also in regard to the establishment and maintenance of reserves of ordnance and ammunition and depots of supplies; and shall advise as to the delivery of provisions and stores of every kind required by the fleet.

(5) It shall coordinate the work of the Naval War College and the Office of Naval Intelligence and shall consider and report upon naval operations, maneuvers, tactics, organization, training, and such other subjects as the Secretary of the Navy may lay before it.

Admiral VREELAND. The board is the outcome of the difficulty which was experienced in 1898. At that time the Secretary of the Navy found himself without suitable advisers as to the manner in which the war was to be conducted. There were hastily summoned a number of officers of large reputation in the service and they were styled the Strategy Board, and the war thereafter was conducted in accordance with their recommendations. At the close of the war the board was dissolved and for several years we were in the same condition as before the Spanish War. I think it was due to the efforts of the Secretary, who realized that he must have a board of advisers, that this General Board was established.

Mr. HENSLEY. In time of war? That was the original thought that the Secretary wanted counsellors to aid him to direct the campaign of warfare?

Admiral VREELAND. In time of peace as well as war.

Mr. HENSLEY. That was the original idea of the Secretary?

Admiral VREELAND. Yes, sir. It was brought out in 1898 in the Spanish War, and afterwards the Secretary wanted advice not only with regard to campaigns but other matters—the preparation of the plan for war, members of personnel, etc.

Mr. ROBERTS. The general naval policy?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. And it continued to grow and develop until now it is known as the General Board?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Does the Secretary rely upon the General Board for information concerning the needs of the department?

Admiral VREELAND. Rely? He asks the General Board for information and advice, but the Secretary is in no wise bound to be governed by that advice?

Mr. HENSLEY. But he calls upon the General Board to give him advice?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Concerning the needs of the department?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. You say that it was organized in 1898, during the Spanish-American War?

Admiral VREELAND. That was the Strategy Board. The General Board was organized in 1900.

Mr. HENSLEY. And it has assumed larger responsibilities?

Admiral VREELAND. Its duties have increased in scope; yes, sir.

Mr. HENSLEY. You say that the Secretary is not in any particular bound to accept the directions of the General Board?

Admiral VREELAND. He is not.

Mr. HENSLEY. In the recommendations which your board makes to the Secretary you take into consideration the rating of all of the great nations of the world so far as armament is concerned?

Admiral VREELAND. Not all of them; the more important ones.

Mr. HENSLEY. I said "all the great nations?"

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. What class have you placed the United States Government in?

Admiral VREELAND. You mean relatively?

Mr. HENSLEY. Yes, sir.

Admiral VREELAND. At the present time we are No. 3.

Mr. HENSLEY. What nations now excel us?

Admiral VREELAND. England and Germany.

Mr. HENSLEY. Can you see any condition that exists in Germany and England as compared with the United States Government which necessitates a larger navy on the part of those Governments than we should have?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. To a large extent the navy of Germany is intended for use on the North Sea, primarily?

Admiral VREELAND. North and Baltic Seas.

Mr. HENSLEY. Within the last 10 years have you ever figured the amount that we have expended upon our Navy as against the amount which Germany has expended upon her navy?

Admiral VREELAND. No, sir.

Mr. HENSLEY. Do you appreciate this fact, that this country has expended something like a billion dollars more than Japan has within the past 10 years for naval purposes?

Admiral VREELAND. I think that is entirely possible.

Mr. HENSLEY. Has your board discussed the conditions that obtain over our country, the tax burden of our people to-day as compared with heretofore? They view it from a military standpoint?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Do you realize that the Federal Government to-day is costing the American people from \$50 to \$60 per family every year?

Admiral VREELAND. I never heard it put that way.

Mr. HENSLEY. You never heard it stated that way?

Admiral VREELAND. No, sir.

Mr. HENSLEY. The military branch of this Government, the Navy together with the Army, together with the burdens of past wars, represents about 71, or 71 per cent, of the total taxation?

Admiral VREELAND. I have seen figures very much like that.

Mr. HENSLEY. You can see that that is a tremendous burden resting upon the American people, can you not?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. If we have, say, within the last 30 years, multiplied the amount that goes to the Navy by 10, it is very reasonable for us to anticipate that we will increase in the future by that amount?

Admiral VREELAND. No, sir.

Mr. HENSLEY. It is not?

Admiral VREELAND. No, sir.

Mr. HENSLEY. Do you not think that the larger the machine becomes the more momentum it takes on?

Admiral VREELAND. No, sir. Not if the recommendations of the General Board are given consideration.

Mr. HENSLEY. In that connection, is it not true that there are many views with reference to the number of units that we should

have in the Navy as we have admirals who are on duty in the Navy? You can hardly find two or more admirals who entertain the same view respecting the size that the Navy should be in this country.

Admiral VREELAND. I think those who have given the matter earnest thought are pretty much in agreement.

Mr. HENSLEY. I wish to say in that connection that I have talked with different admirals and the most conservative of them insists that we should have from '75 to 100 battleships. I have found no union on that proposition at all. You can see that if the past is any criterion to judge the future by, that within the next 30 years we will be appropriating for the Naval Establishment of this country \$1,500,000,000 of money.

Admiral VREELAND. If you mean the entire establishment, the figure is well within bounds.

Mr. HENSLEY. Then you can not take the past as a criterion to judge the future by. What is your opinion of the fighting worth of a submarine?

Admiral VREELAND. Its field is limited, and in the field for which the submarine is built it is most useful.

Mr. HENSLEY. What do you think can be done by a fleet of submarines when it comes to defending any harbor or coast?

Admiral VREELAND. They are useful, indeed.

Mr. HENSLEY. Could any navy make any headway at all in the vicinity of a harbor where there are submarines?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. I would like to call your attention to the testimony given by Admiral Dewey some years ago after having witnessed some of the experiments down near Mount Vernon.

Mr. BRITTEN. How long ago?

Mr. HENSLEY. In 1900, after he came back and was receiving the plaudits of the American people.

Mr. BRITTEN. Fourteen years ago?

Mr. HENSLEY. Yes, sir.

Mr. BRITTEN. Did we have submarines then?

Admiral VREELAND. Yes, sir. We had just purchased our first Holland boat.

Mr. HENSLEY. Has the submarine progressed and been improved from time to time since the first one?

Admiral VREELAND. Very much indeed.

Mr. HENSLEY. As much so as any other branch of the service?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. In that connection and with the permission of the chairman, let me read to you a short statement by Admiral Dewey. He said:

Gentlemen, I saw the operation of the boat down off Mount Vernon the other day. Several members of this committee were there. I think we were all very much impressed with its performance. My aid, Lieut. Caldwell, was on board. He could tell, if necessary, what was done from the inside. The boat did everything that the owners proposed to do. And I said then, and I have said it since, that if they had had two of those things in Manila, I never could have held it with the squadron I had. The moral effect—to my mind it is infinitely superior to mines or torpedoes or anything of the kind. With those craft moving under water it would wear people out. With two of those in Galveston all the navies of the world could not blockade that place.

What do you think of that statement, do you approve of it?

Admiral VREELAND. It is undoubtedly true that two submarines in Manila Bay on the 1st of May, 1898, would have greatly bothered the Admiral, but conditions have changed since then.

Mr. HENSLEY. You say that they have improved and kept pace with the changed conditions?

Admiral VREELAND. Yes, sir; but not at the expense of the others; the others have also advanced.

Mr. HENSLEY. If they have kept pace with the others, if that was the condition at that time and they have kept pace, why would not their comparative worth be the same to-day?

Admiral VREELAND. Possibly it would. It would be folly to tie up a fleet in a harbor of an enemy's country, knowing that the enemy has submarines in that harbor.

Mr. HENSLEY. I want to say that I would like to read extracts not only from the testimony of Admiral Dewey, but the other admiral, Admiral Hichborn, but I realize that our time is limited.

The CHAIRMAN. Proceed, or just mark such parts as you desire to go into the record and hand them to the stenographer, and he will insert them, and the admiral will make any answer or explanation that he sees proper to submit.

Mr. WILLIAMS. You speak of the plan of the General Board. What does the plan of the General Board contemplate, an offensive Navy or merely a defensive Navy?

Admiral VREELAND. It is a defensive Navy. If we concede, which I think we all do, that we will never make unjust war, it is defensive, but it is to defend our honor as well as our country.

Mr. WILLIAMS. In determining the size or extent of our Navy you no doubt take into consideration our location with reference to the other powers, our isolation, and the extent of our shores, do you not?

Admiral VREELAND. Yes, sir.

Mr. WILLIAMS. In view of that condition do we require so great a Navy, a defensive Navy, as those powers of Europe who are in direct touch and contact with other powers?

Admiral VREELAND. No; for the reason that any power coming 3,000 miles or more to attack us would not be able to bring all of its forces to bear.

Mr. WILLIAMS. What per cent of the Navy, for instance, of England could be spared under ordinary conditions and complications in Europe to be sent to America to attack us?

Admiral VREELAND. I do not think she would like to spare any.

Mr. WILLIAMS. Could she, under ordinary conditions and complications, spare 50 per cent of her Navy to come here?

Admiral VREELAND. I should say not—not without an understanding with the other powers.

Mr. WILLIAMS. Is that true also of Germany?

Admiral VREELAND. I should say that it is true also of Germany at the present time.

Mr. WILLIAMS. Is that true of France?

Admiral VREELAND. I should say that is true of France also.

Mr. WILLIAMS. Is it true of Japan?

Admiral VREELAND. No, sir.

Mr. WILLIAMS. Would Japan be free under present conditions to send practically her whole navy across the Pacific to the Pacific coast?

Admiral VREELAND. To our west coast?

Mr. WILLIAMS. Yes, sir.

Admiral VREELAND. I do not think she would have occasion to do that; she could inflict damage nearer home.

Mr. WILLIAMS. I infer from your answers that our need for a larger navy and extensive naval construction is in the Pacific rather than in the Atlantic?

Admiral VREELAND. At present. You can not tell what will be the case a year hence; no one can tell.

Mr. WILLIAMS. I understood you to state, Admiral, that the European powers could hardly spare a sufficient number of their navy to come this far from their base to attack us?

Admiral VREELAND. At the present time. No one can predict what alliances and ententes may exist a year hence.

Mr. WILLIAMS. At the present time it is merely the contemplation of that fear which prompts the board in advising the present naval program?

Admiral VREELAND. The board contemplates that; yes, sir.

Mr. WILLIAMS. Is the theory of the board to construct a large navy with a view to thereby compelling peace or for actual war?

Admiral VREELAND. Both.

Mr. WILLIAMS. Relatively, our Navy is now third in size?

Admiral VREELAND. Yes, sir.

Mr. WILLIAMS. And Japan fourth?

Admiral VREELAND. Japan is fifth.

Mr. WILLIAMS. Then France is fourth?

Admiral VREELAND. Yes, sir.

Mr. WILLIAMS. Germany is second and England first?

Admiral VREELAND. Yes, sir.

Mr. WILLIAMS. And coming to another line, in addition to the construction of battleships we have been appropriating more than \$100,000,000 for other purposes. Assuming that your theory or policy is right as to the number of battleships that may be required for defensive purposes and as a warning, are there not other conditions that could be remedied materially which have compelled an expenditure of over \$100,000,000 for other purposes than the construction of battleships? Have we not too many navy yards equipped, too many naval stations, and too many independent establishments to make for effectiveness and economy?

Admiral VREELAND. As the yards are at present equipped, I do not think that we have too many.

Mr. WILLIAMS. Do you not believe that one thoroughly equipped, well-located, modern, up-to-date navy yard on the Atlantic and one on the Pacific would be sufficient for our purposes?

Admiral VREELAND. Where would you locate them?

Mr. WILLIAMS. I said properly located. I have my opinion, but it is not worth much.

Admiral VREELAND. I think the proposition to locate one navy yard on the Atlantic coast to meet all the needs of the fleet is impossible.

Mr. WILLIAMS. Would two navy yards answer?

Admiral VREELAND. Two would be twice as good as one.

Mr. WILLIAMS. Would they answer the purposes of your needs?

Admiral VREELAND. We must always look for war and disaster. If we had two yards, each competent to answer the requirements, all the requirements of the fleet, I should think they would suffice.

Mr. WILLIAMS. Do you approve of the present manner of distributing our naval stations, Boston, Portsmouth, Brooklyn, Philadelphia, Norfolk, Charleston, Pensacola, New Orleans, and Key West?

Admiral VREELAND. They are there, sir, and we should make use of them. I can not say that if you closed up half the yards on the Atlantic coast, the remaining yards would be sufficient.

Mr. WILLIAMS. You know, do you not, that most of the yards are idle most of the time and are begging for work; is not that true?

Admiral VREELAND. That is true at times; yes, sir; but what are you going to do when the rush comes?

Mr. WILLIAMS. What rush have you in mind?

Admiral VREELAND. We are always looking forward to war, or the threat of war.

Mr. WILLIAMS. I thought our preparation was for peace. Is not the purpose of the establishing of a large Navy to compel peace?

Admiral VREELAND. To compel peace; still you must be prepared for war.

Mr. WILLIAMS. And that is the theory of the general board?

Admiral VREELAND. Precisely.

Mr. WILLIAMS. Do you approve of maintaining such a number of separate establishments, all equipped, simply for the sake of a possible contingency or emergency?

Admiral VREELAND. That is the same question you asked a while ago.

Mr. WILLIAMS. Probably, differently phrased.

Admiral VREELAND. The Navy Department at the present time has not yards more than sufficient to maintain the fleet in an efficient condition and to be ready for war.

Mr. WILLIAMS. Is that because they are not sufficiently equipped because we have not enough navy yards?

Admiral VREELAND. I think two yards, each equal to the needs of the fleet, or three yards, each one of which is equal to the needs one-half the fleet, would answer the purpose; but we have not them and we can not get them. I wish to add that this is a personal view only.

Mr. WILLIAMS. Multiplying the navy yards multiplies the number of dry docks necessary?

Admiral VREELAND. Not necessarily the number of dry docks.

Mr. WILLIAMS. But it does multiply the overhead charges?

Admiral VREELAND. Yes, sir.

Mr. WILLIAMS. The point in my mind is this: Assuming for the present that your battleship program is one that may be proper and needed, is there any way you can suggest by which this enormous expenditure of money for other purposes than the construction of battleships can be limited?

Admiral VREELAND. Do you mean the personnel? Outside of the material fleet they are the big item of expenditure. I do not see any way. The navy yards are not more than sufficient for the present needs and the personnel is lacking in numbers.

Mr. WILLIAMS. Does the maintenance of our various establishments cost us more than the various countries named by you?

Admiral VREELAND. Yes, sir; just the same as a loaf of bread does.

Mr. WILLIAMS. Because the material and wages are higher?

Admiral VREELAND. Wages are higher.

Mr. WILLIAMS. Does England or Germany have independent naval stations and navy yards to anything like the number or extent that we have?

Admiral VREELAND. They have not the same extent of coast. In Germany I think they are limited to two ports in the Baltic and one in the North Sea. England has the following Royal dock yards: First-class: Devonport, Portsmouth, Rosyth. Second-class, Pembroke, Chatham, Haulbowline, Grimsby. Cromarty has a floating dock with a lifting capacity of 33,000 tons, 680 by 144 feet. For purposes of repair, a floating factory is to be established at Cromarty during the summer of 1914.

Mr. WILLIAMS. If we adopt the naval program recommended by the General Board, will that change our relative place or will we merely maintain our place as third?

Admiral VREELAND. We will maintain our place as third.

Mr. ROBERTS. Your last answer is based on the relative standing of the two leading powers in 1920, that if the General Board's program was carried out we would be third?

Admiral VREELAND. Yes, sir; in all probability.

Mr. ROBERTS. Based on the relative standing in the future, in 1920?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. I understood you to say that Japan now occupies fifth place?

Admiral VREELAND. That is right. France is ahead of her.

Mr. ROBERTS. If we continue our policy of one battleship a year and Japan continues the policy under which she is operating, what will be the condition in five years or 10 years?

Admiral VREELAND. We do not know what they are going to do. Japan has no announced policy.

Mr. ROBERTS. What have they done during the last two years as compared to this country?

Admiral VREELAND. Japan.—Capital ships authorized from 1911, inclusive: *Fuso*, battleship, authorized 1911, to be launched in February, 1914. Three ships, battleships, authorized 1913, one of them laid down in November, 1913. *Hiyei*, battle cruiser, authorized 1911, launched November 21, 1912; *Kirishima*, battle cruiser, authorized 1911, launched November 30, 1913; *Haruna*, battle cruiser, authorized 1911, launched December 4, 1913. One ship, battle cruiser, requested in estimates submitted for 1914. Not yet authorized.

We have a great superiority over Japan in the way of capital ships at the present time.

Mr. ROBERTS. In number or in superiority of the units?

Admiral VREELAND. Both. Our latest ships are at least as good as her latest, and we have a larger number of dreadnaughts.

Mr. ROBERTS. She is building more quickly, is she not?

Admiral VREELAND. No.

Mr. ROBERTS. Did I not understand you to say that she had one battle cruiser built and two or three already laid down? We have not a single one.

Admiral VREELAND. We have no battle cruisers; are not building that type. Japan has one completed and three building.

The total weight of metal in one broadside is: 8, United States, 83,680 pounds; 17, Germany, 129,542 pounds.

The total muzzle energy of one broadside is: 8, United States, 4,512,456 foot-tons; 17, Germany, 8,939,815 foot-tons.

Combining the foregoing, the total muzzle energy one main battery broadside of all battleships and battle cruisers is, spring of 1914: United States, 8,507,548 foot-tons; Germany, 11,209,657 foot-tons.

The total broadside torpedo fire is: United States, 39; Germany, 124.

Mr. ROBERTS. Coming back to the point as to what the two countries are doing, Japan is now building seven first-class units?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. How many are we building?

Admiral VREELAND. We are building five; one more authorized.

Mr. ROBERTS. Do you consider the battle cruiser a more important ship than the battleship?

Admiral VREELAND. No, sir.

The CHAIRMAN. Referring to Mr. Williams's questions, I want to call attention to the fact that this morning I am in receipt of a letter from the Secretary of the Navy stating that on account of the work heretofore done in repairing ships under the authorizations and appropriations which we have heretofore made, that for the fiscal year 1915 it will not be necessary for the committee to authorize any vessels to be repaired under special authorization, as we have heretofore done, where it costs more than \$200,000 for a ship or 20 per cent of its original cost. That item will be left out of the appropriation bill this year. We have heretofore included authorizations that amounted to between \$6,000,000 and \$7,000,000 a year.

Mr. HENSLEY. I want to ask this question, Admiral, whether or not you have ever considered the fact that a state of preparedness sometimes gets individuals as well as nations into trouble? Have you ever thought of that?

Admiral VREELAND. I have not thought of that very seriously, but offhand I do not think that is true.

Mr. HENSLEY. Would we ever have had war with Spain if the battleship *Maine* had not been in the harbor of Habana?

Admiral VREELAND. Possibly not at that time, but I think we may have had war later.

Mr. HENSLEY. You think later there would have been war, but that is what precipitated it?

Admiral VREELAND. The *Maine* disaster undoubtedly hastened it.

Mr. FARR. How many wars in which we have been engaged would have been prevented had we been properly prepared? For every five years of peace there is one year of war.

Admiral VREELAND. I think five wars could have been prevented or their duration very much shortened.

Mr. BRITTEN. Along the line of Mr. Hensley's question, what do you think is the greatest menace toward war—preparedness or unpreparedness?

Admiral VREELAND. Unpreparedness?

Mr. BUCHANAN. You believe in having peace if we have to fight for it?

Admiral VREELAND. You are sure to have war if you are not prepared.

Mr. HENSLEY. In the little stir occasioned by the insistence of the Cleveland administration on the Monroe doctrine being lived up to—

Admiral VREELAND (interposing). Venezuela?

Mr. HENSLEY. Yes, sir; what was our state of preparedness at that time compared with Great Britain's?

Admiral VREELAND. Distinctly bad.

Mr. HENSLEY. Yet Great Britain yielded to our terms, did she not?

Admiral VREELAND. Not wholly; no.

Mr. HENSLEY. I have always heard, and from all the information I have been able to obtain I have been under the impression that the Cleveland administration scored a great victory in that matter.

Mr. BRITTEN. It was a pure bluff.

Mr. HENSLEY. Do not these other countries keep a pretty close tab on the state of preparedness of other countries?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Is it not a fact that to-day it has gotten to the point where it is a rivalry between the great nations to see which can outdo the other in extending armaments, increasing the navy, and all of those propositions?

Admiral VREELAND. No, sir; I do not think it is rivalry at all.

Mr. HENSLEY. Why do we insist upon keeping a certain relation with Great Britain, Germany, and these other countries?

Admiral VREELAND. We do not with Great Britain.

Mr. HENSLEY. If Great Britain should fall back and these other countries should cease building battleships, would that have any effect upon the General Board and its recommendations and representations made to the Secretary of the Navy?

Admiral VREELAND. If Great Britain should fall back?

Mr. HENSLEY. And the other countries.

Admiral VREELAND. Most decidedly. The strength of a navy is always comparative. The General Board would undoubtedly be governed by the changed conditions.

Mr. HENSLEY. You are entirely cognizant of all the correspondence that is on file in the State Department relative to the disarmament of the Great Lakes?

Admiral VREELAND. Not entirely.

Mr. HENSLEY. If negotiations had not been taken up under the Jefferson administration which resulted some three years later in the disarmament of the Lakes, we would have battleships on the Lakes as against thousands of miles of country with thousands of British subjects residing on one side of the line and thousands of American citizens residing on the other in entire peace and harmony. Have you ever considered that, Admiral?

Admiral VREELAND. Yes, sir. It is a very satisfactory case.

Mr. HENSLEY. Do you not think that it would be an incitement to war if we had battleships on the Lakes with frowning forts along that border line?

Admiral VREELAND. I do not think so.

Mr. HENSLEY. Do you not think that lads in the country who stick big pistols in their hip pockets and have an exaggerated idea of their rights very often insist upon others observing their idea of their rights, based upon the pistols in their hip pockets, and do not nations have the same sort of a feeling as individuals?

Admiral VREELAND. I do not think that the comparison between **lands in the country and nations** is a just one.

Mr. HENSLEY. Can you explain the singular coincidence, at least to me, that when this committee has under consideration the appropriation bill and especially when we reach the day and time when we vote upon extensions and the increase of battleships that we hear the war cry and all that sort of thing and the papers are full of those accounts, can you give me any information on that, how that occurs every year?

Admiral VREELAND. No; I can not

Mr. HENSLEY. You have observed it, have you not?

Admiral VREELAND. You mean in this country?

Mr. HENSLEY. Yes, sir; right here, especially in Washington.

Admiral VREELAND. I do not think it occurs in this country.

Mr. WILLIAMS. Are there conditions and complications and foreign questions that might call for extra preparations at this time?

Admiral VREELAND. I have no private sources of information.

Mr. GRAY. I wish to inquire of the Admiral if it is not the policy of other Governments to increase their navies with all the other leading powers?

Admiral VREELAND. It is, sir.

Mr. GRAY. What would be the advantage to us or any other power if the navies were increased equally by all the nations of the world? Would there be any advantage to us or to any other power?

Admiral VREELAND. Not if you mean in the same ratio.

Mr. GRAY. Would not the same grounds exist after an increase for a further increase?

Admiral VREELAND. It would seem so.

Mr. GRAY. The only advantage that could be gained by an increase of the navies to any nation in the world would be a greater increase of one nation over another. Is it not a fact that there is a rivalry now between nations?

Admiral VREELAND. No, sir.

Mr. GRAY. They are all going up together?

Admiral VREELAND. Yes, sir.

Mr. GRAY. There would be no advantage gained by any nation, then. How long could that be maintained, that even increase, and what advantage would it be to any nation?

Admiral VREELAND. If it continues to increase, the poorer nation will eventually exhaust itself, and then the other nations, the United States included, will have a free hand—I mean be free to build in accordance with the changed conditions. I think it proper to add that rivalry, in the sense in which that word has been used here, does not really exist, nor do I think it is contemplated. Germany, to whom it is oftentimes attributed, states in a memorandum appended to the naval bill, 1900, her reasons for the creation of a fleet of a definite size in the following words:

The German Empire needs peace at sea.—For the German Empire of to-day the security of its economic development, and especially of its world trade, is a life question. For this purpose the German Empire needs not only peace on land but also peace at sea—not, however, peace at any price but peace with honor which satisfies its just requirements.

And further—

For the protection of sea trade and colonies there is only one means—a strong battle fleet.

It is along such lines that the General Board advocates a fleet of 48 battleships.

Mr. GRAY. Then it is only a question of the limit of taxation?

Admiral VREELAND. Yes, sir.

Mr. BUCHANAN. Have not Great Britain and Germany almost reached the breaking strain?

Admiral VREELAND. I have seen it so stated, but thus far they have not shown signs of it in their programs. The recent increase in the German Army called for a nonrecurrent expenditure of \$250,000,000.

Mr. WILLIAMS. You imply in your answer that it will go on until the United States has a free hand. You mean by that that our resources are so much greater than all the other nations in this contention and rivalry that ultimately we will have the greatest navy on earth?

Admiral VREELAND. No; I mean because of our resources we will arrive at a stage where we can slow down with reference to the exhausted nation or nations.

Mr. WILLIAMS. Simply go ahead building and building until they realize that we can outdo them, and then they will stop?

Admiral VREELAND. So long as our Navy is comparatively weak, we should go ahead. We are not trying to outdo.

Mr. WILLIAMS. Do you advocate or favor that policy which by joining in this rivalry will eventually, because of our great resources, compel the other nations to call a halt?

Admiral VREELAND. No, sir.

Mr. WILLIAMS. Where do you place the limit?

Admiral VREELAND. The limit is when we are safe. We must go on building if the others do; if the others stop building, we can stop building when we have reached the safe point.

Mr. WILLIAMS. And if the others go on we must go on?

Admiral VREELAND. Yes, sir. If they all throw their navies on the scrap heap we can do so.

Mr. WILLIAMS. And you take that position notwithstanding our isolation from other nations?

Admiral VREELAND. Yes, sir; because we are not keeping up with their program. We are aiming to keep at what we consider a safe point—safe in view of the fact that they have to come miles across the sea.

Mr. HENSLEY. You say that there is no rivalry between the countries. Is there not in all the countries, so far as you know, a system and a campaign to continue increasing armament by those who are being benefited by it?

Admiral VREELAND. In this country I do not think there is.

Mr. HENSLEY. By the armor-plate people—all those people?

Admiral VREELAND. No, sir.

Mr. HENSLEY. Is there any relation at all existing between the Navy Department and what is known as the Navy League?

Admiral VREELAND. Officially, no.

Mr. HENSLEY. You know of that organization?

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Do you know who comprises the officers of the organization?

Admiral VREELAND. Yes, sir; I am a subscriber to The Navy.

Mr. HENSLEY. What is the purpose of the Navy League?

Admiral VREELAND. To put us in a position of safety, solely that.

Mr. HENSLEY. And to advocate increased armament?

Admiral VREELAND. Yes, sir; but for the purpose just stated.

Mr. HENSLEY. They sent out to my district letters and had my people sign them and send them back appealing to me to vote for a larger Navy. They are doing that all the time?

Admiral VREELAND. I do not know, sir.

Mr. HENSLEY. Are they sending men over the country making speeches?

Admiral VREELAND. Yes, sir; I have heard so.

Mr. HENSLEY. I will ask you whether or not some retired naval officers are being sent over the country?

Admiral VREELAND. Not sent by the department.

Mr. HENSLEY. They are making addresses and disseminating the sentiment for an increased navy. That is being done all the time. Do you know Col. Thompson, connected with the Navy League?

Admiral VREELAND. I know him personally.

Mr. HENSLEY. What is his business?

Admiral VREELAND. I think he is engaged in smelting work.

Mr. HENSLEY. He is a big nickel man?

Admiral VREELAND. I have heard so.

Mr. HENSLEY. He has been selling metal to the United States Government in times past?

Admiral VREELAND. I have no idea.

Mr. HENSLEY. Let me ask you about Mr. Satterlee—who is he the attorney for?

Admiral VREELAND. He was formerly the Assistant Secretary of the Navy.

Mr. HENSLEY. He is the brother-in-law of the present J. P. Morgan and is interested in the Morgan banking house of New York City to that extent?

Admiral VREELAND. I do not know.

Mr. HENSLEY. I have not the list right here. Do you know any of the other officers?

Admiral VREELAND. Gen. Horace Porter is the president.

Mr. HENSLEY. What great corporations is he connected with?

Admiral VREELAND. I do not know.

Mr. HENSLEY. Do you know whether his corporations are closely allied with the great Steel Trust?

Admiral VREELAND. No, sir.

Mr. HENSLEY. You do not know that?

Admiral VREELAND. I do not.

Mr. HENSLEY. Do you know whether or not he is connected with a big railroad property that is also interlocked with—

Admiral VREELAND. (interposing). No, sir; I know nothing of the business affairs of any of the league's officers.

Mr. BUCHANAN. Have you made any effort to find out?

Admiral VREELAND. No, sir.

Mr. HENSLEY. What are the dues of that organization?

Admiral VREELAND. I do not know.

Mr. HENSLEY. \$2 a year?

Admiral VREELAND. I do not know.

Mr. HENSLEY. Do you know what membership they have?

Admiral VREELAND. No; I do not know.

Mr. HENSLEY. Can you approximate the number?

Admiral VREELAND. No.

Mr. HENSLEY. Will it reach the thousands?

Admiral VREELAND. I should say more than a thousand.

Mr. HENSLEY. Will it go as high as 2,000?

Admiral VREELAND. I should think it might go up to 5,000.

Mr. HENSLEY. \$2 a year, that is about what it will average. Admiral, have they a paper which they print?

Admiral VREELAND. The Navy is not printed by the Navy League, although it advocates the purposes of the Navy League.

Mr. HENSLEY. The Navy League is essentially behind that publication, is it not?

Admiral VREELAND. I can not say.

Mr. HENSLEY. Can you explain to me the campaign that the Navy League keeps up to further its purposes, to carry out the plans for which it was created?

Admiral VREELAND. The object?

Mr. HENSLEY. Yes, sir; the expenses it is put to?

Admiral VREELAND. I do not think there is much expense; I do not know.

Mr. HENSLEY. They have a secretary?

Admiral VREELAND. I presume so.

Mr. HENSLEY. Their offices are where?

Admiral VREELAND. I do not know.

Mr. HENSLEY. In the Southern Building, a handsome building, they have a suite of rooms.

Mr. FARR. What is the object of the Navy League?

Admiral VREELAND. It is purely patriotic; to put the country on a safe basis. That is absolutely all I know. I am not a member of the Navy League, and among its officers I know personally only those who have at one time or another been associated with the Navy.

Mr. BUCHANAN. You say that it is solely for patriotic purposes, what definition do you put on "patriotic purposes"?

Admiral VREELAND. To put the country on a safe basis. That is, to the best of my knowledge, its purpose.

Mr. BUCHANAN. In regard to your connection with this Navy League, as I understood you, you never made any effort to secure information as to what connection its officers had with the private corporations that were supplying the Navy Department with material, metal, ships, and other war munitions, and as I understood your answer, you did not care anything about that?

Admiral VREELAND. No, sir; I do not think I said that.

Mr. BUCHANAN. Then I misunderstood you.

Admiral VREELAND. I pleaded entire ignorance of their business affairs.

Mr. BUCHANAN. Do you not think it is your duty in your official position as a member of this board to know something about who you are associating with in matters of this sort?

Admiral VREELAND. I am not associated with the Navy League; am not a member.

Mr. BUCHANAN. I misunderstood the whole matter. I understood you to say that you were a member.

The CHAIRMAN. The admiral said that he was not a member of the Navy League two or three different times.

Mr. ROBERTS. I would like to ask the admiral a question. He has been telling us about the policy of other nations and the class of ships building, particularly the battleship cruiser. I want to get down to the subsidiary craft. Admiral, do you know what the policy of other nations is with regard to increasing the number of destroyers and the type of destroyers which other nations are now building?

Admiral VREELAND. I do not think there is any change abroad. Germany has a program of 144 destroyers, 41 battleships, or 61 capital ships all told. That would be about $2\frac{1}{2}$ destroyers to a ship.

Mr. ROBERTS. Do you know whether England has any policy as to the number of destroyers or torpedo boats that they will provide for each capital ship?

Admiral VREELAND. I do not think she has a policy.

Mr. ROBERTS. Please complete your answer as to Germany and take up the number of surface craft with relation to the number of capital ships.

Admiral VREELAND. In Germany their policy is about $2\frac{1}{2}$ destroyers to a ship, 41 battleships and eventually 61 capital ships. That is, battleships and battle cruisers. Her destroyers would number 144. We have asked for 4 destroyers for each battleship, because our destroyers have to do other duty. We have 3 scout ships, but the other vessels we would use as scouts have an inferior speed, a speed of 21 or 22 knots, which is not sufficient; and even so, we will not have enough scouts unless we use the destroyers as such. Therefore, we ask for 4 destroyers to each battleship.

Mr. ROBERTS. How many destroyers has Great Britain and how many capital ships; what is the ratio at the present time?

Admiral VREELAND. England has 58 battleships and 9 battle cruisers—67—and 143 destroyers, rather more than 2 to 1. Japan has a preponderance of destroyers. She has 16 capital ships and 53 destroyers, more than 3 to 1.

Mr. ROBERTS. Do you know what the program in England contemplates in regard to destroyers? Are they letting down or proposing a large number of destroyers at the present time?

Admiral VREELAND. They are not letting down. They are building 44.

Mr. ROBERTS. All nations have practically abandoned what we termed at one time the torpedo boat?

Admiral VREELAND. They do not build any more. The torpedo boat is reserved for harbor defense. Instead of building more, they take the destroyers no longer suited for the high seas and use them.

Mr. ROBERTS. You spoke about the number of destroyers which Japan has. I understand you to say 54?

Admiral VREELAND. Japan has 54 and 28 torpedo boats, making 82. She has 16 capital ships completed.

Mr. ROBERTS. Four to one?

Admiral VREELAND. She has not stopped building destroyers, by any means.

Mr. ROBERTS. How have we planned the proportion between the capital ships and the destroyers?

Admiral VREELAND. We have 33 completed battleships and 46 completed destroyers.

Mr. BRITTEN. How many capital ships?

Admiral VREELAND. Thirty-three completed, two practically completed but not yet commissioned.

Mr. ROBERTS. Is there any tendency in the General Board to substitute for the destroyer any other class of boat to any extent whatever?

Admiral VREELAND. That matter has been discussed, but our discussions have not been put in form for the department's consideration; so I will simply state their trend. It is the idea that if we develop a seagoing submarine we can reduce the number of destroyers. There is no saving in money.

Mr. ROBERTS. No saving; it would be a change of policy?

Admiral VREELAND. For the better.

Mr. ROBERTS. You think it would be a better plan to have a large seagoing submarine going with the fleet or with a battleship rather than a surface destroyer?

Admiral VREELAND. This year's estimates ask for three submarines, two of the harbor type, about 550 tons, and one an experimental seagoing submarine; also, eight destroyers.

Mr. ROBERTS. If it is a success, the plan would be to have a number of these seagoing submarines built for the purpose of accompanying the fleet?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. That would be their function?

Admiral VREELAND. Yes, sir. Not all submarines would be built for that sole purpose.

Mr. ROBERTS. I understand; but some?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. And they would be desired to go with the fleet and take the place of the destroyers which could be used for scout or other purposes?

Admiral VREELAND. They are themselves destroyers.

Mr. ROBERTS. Please tell us how we stand in the number of submarines we have at the present time as compared with the number that the General Board thinks we should have?

Admiral VREELAND. We have now built and building about 50, and the idea of the General Board was that our harbor defense would call for 100 of this type.

Mr. ROBERTS. You say in time it would be desirable from the naval standpoint if we had them?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. How are they to be distributed? Suppose we had 100, where would you place them?

Admiral VREELAND. All down the two coasts. A large number would go to the Panama Canal.

Mr. ROBERTS. There are some at the Panama Canal. Would you have some in Hawaii?

Admiral VREELAND. Yes; Hawaii and the Philippines.

Mr. ROBERTS. And some at Guam? Do the plans of the General Board contemplate some at Guam?

Admiral VREELAND. At one time elaborate fortifications were contemplated there, but there is none at present. I believe it was at

one time the purpose to make it the Gibraltar of the Pacific. I do not think we would send any there now.

Mr. ROBERTS. Do not the plans of the General Board contemplate a certain number of submarines at Guam or probably the Philippines?

Admiral VREELAND. We would like to have more there, but we are not disposed to send them now. We have none at Guam.

Mr. ROBERTS. I understand. Do not the plans of the General Board contemplate submarines for Alaska?

Admiral VREELAND. No specific recommendation has been made.

Mr. ROBERTS. And a number for the Pacific coast?

Admiral VREELAND. Most decidedly.

Mr. ROBERTS. How many do you contemplate for the Pacific coast?

Admiral VREELAND. They can go through the canal, and they are so light that they can move from one side to the other even now. There are eight there now.

Mr. ROBERTS. Do the plans contemplate submarines for the defense of the mouth of the Mississippi? In one of our appropriation bills recently there was an item that some of the submarines built should be stationed there. I would like to ask you if the board's plans contemplate practically a permanent base of a certain number of submarines at the mouth of the Mississippi?

Admiral VREELAND. I do not think that was one of the recommendations of the General Board. If it is, I will amend my answer.

Mr. ROBERTS. Guantanamo is one of the important points where it would be desirable to have the submarines?

Admiral VREELAND. The Philippines, Hawaii, the west coast, the east coast, and the canal are the points designated.

Mr. ROBERTS. You have to base them somewhere?

Admiral VREELAND. Yes, sir; base them at any navy yard.

Mr. ROBERTS. Are we not building a submarine to-day which could proceed from the Pacific coast to the Philippines under its own power, stopping at Hawaii on the way?

Admiral VREELAND. That would be a longer trip than any submarine ever made.

Mr. ROBERTS. That is true. Is not the theoretical radius sufficient to take them there, the heavy oil-engine submarine, to take them to Hawaii and then on to the Philippines?

Admiral VREELAND. The theoretical radius is 3,000 miles at 11 knots, but a voyage of that kind would be a severe tax on the personnel. They made an extended coastwise trip when we sent the submarines from New York to the Gulf. They stopped every 48 hours or so.

Mr. ROBERTS. Did they stop going from Guantanamo to Colon?

Admiral VREELAND. No; and that distance is 700 miles.

Mr. ROBERTS. That was the longest leg?

Admiral VREELAND. And they went through all right.

Mr. ROBERTS. You recall when the fleet went around the world, and they took some destroyers and torpedo boats?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. It was a mooted question in the department whether the small craft could make that trip. No such thing had ever been attempted before, but they went through all right. Is not the same thing likely to happen when you put the submarines to the test?

Admiral VREELAND. I suppose the youngsters in command of the submarines would get there somehow; the boats would have to be towed part of the way.

The CHAIRMAN. It would depend somewhat upon the weather and water?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. The General Board believes to-day that the submarine, with its advancement and improvement over the type when Admiral Dewey gave his testimony 14 years ago, has made it a very efficient and desirable weapon for harbor and coast defense?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. And the General Board sees in that weapon also a seagoing offensive instrument?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. And would like to see a larger submarine of seagoing type constructed in order that it might accompany the fleet?

Admiral VREELAND. That is true, provided this one we have asked for turns out to be a success—if it comes up to all the requirements.

Mr. ROBERTS. That same problem has presented itself every time there has been an increase in the size of the submarine; there has always been that doubt that the larger submarine might not do what the smaller one was doing; in other words, that the larger one might present some difficulties that do not appear in the smaller one?

Admiral VREELAND. Yes, sir; but the contractors apparently do not anticipate any trouble.

Mr. ROBERTS. Have the contractors taken up with the department the subject of a larger boat?

Admiral VREELAND. It has been discussed; yes, sir.

Mr. ROBERTS. Have they proposed a larger boat?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. One that will fill the requirements of the General Board for seagoing purposes?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. Then, theoretically, we have such a boat now—that is, in embryo. You have a guaranty?

Admiral VREELAND. We have not the appropriation.

Mr. ROBERTS. If Congress will appropriate the money?

Admiral VREELAND. The contract is in the nature of a guaranty.

Mr. ROBERTS. In other words, you have just as much right to rely upon the assurance of the inventors or manufacturers that the larger boat will be successful, this big seagoing boat, as to rely on their statements heretofore that each advance in type would be successful?

Admiral VREELAND. I should say at this time the fear was that they would lose some of the maneuvering power of the boat.

Mr. ROBERTS. Will they lose anything as they increase in size—any of the maneuvering accuracy?

Admiral VREELAND. The big boat will make a wider turn and may take longer to submerge.

Mr. ROBERTS. Is there any reasonable doubt now about the largest seagoing boat?

Admiral VREELAND. I think not; but heretofore we have gone up step by step and now make a jump to just about double the displacement.

Mr. ROBERTS. Not any greater jump than we have made in battleships in tonnage and size?

Admiral VREELAND. I think this will probably run 1,200 tons.

Mr. ROBERTS. Did we not jump almost double with the battleships?

Admiral VREELAND. From 16,000 to 20,000 tons.

Mr. BUCHANAN. Does the General Board give any attention to the construction in or management of the yards?

Admiral VREELAND. The work in the navy yards?

Mr. BUCHANAN. Yes, sir.

Admiral VREELAND. No, sir. No question of that kind is referred to it.

Mr. GRAY. Admiral, are you acquainted with the improvement and development that is now in progress among the navies of the great powers of the world?

Admiral VREELAND. In a general way. We can not get exact information from foreign powers.

Mr. GRAY. Are not the substantial improvements and developments in progress in all of the navies of the world, the great improvements, the same inventions—are they not tried out by all the nations?

Admiral VREELAND. I believe that is true.

Mr. GRAY. Are not the same developments as to armor plate being tried out substantially in all of the navies of the world?

Admiral VREELAND. I believe that is also true.

Mr. GRAY. And in torpedo boats?

Admiral VREELAND. And in destroyers; yes, sir.

Mr. GRAY. And also with the airships?

Admiral VREELAND. Yes, sir.

Mr. GRAY. Of course, I am confining myself to the few great powers. Have you any means of knowing how the information in regard to the same inventions, improvements, and the development is being carried so accurately from one nation to another?

Admiral VREELAND. By the manufacturers seeking business abroad.

Mr. GRAY. The same inventions and improvements substantially are in progress. How is that information being carried from one nation to another?

Admiral VREELAND. I should say by manufacturers and inventors. Is that what you mean?

Mr. GRAY. Yes, sir. Is it true that the material that is manufactured by one company is being sold to all of the navies of the world substantially?

Admiral VREELAND. At one time the Harvey process of making armor was adopted by some European powers; later the Krupp process was decided to be the better, and we adopted that. Contractors in this country obtained the rights.

Mr. GRAY. And the same improvements and developments in projectiles in all of the navies of the world?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. You made a statement a moment ago that you wanted to make Guam the Gibraltar of the Pacific. I understood, after deciding back and forth between Manila, Cavite, and Olongapo, that they had finally adopted a policy to make the Hawaiian Islands, Pearl Harbor, answer that purpose. Do I understand your remark to mean that there is a modification of that policy, and that Guam is to be selected instead of Pearl Harbor?

Admiral VREELAND. I do not mean that Guam is to be selected instead of Pearl Harbor, but there is a feeling that Guam should be strongly fortified to make safe any operations we might conduct to protect the Philippines.

The CHAIRMAN. In other words, Hawaii is 2,100 miles from the Pacific coast and Guam is farther on?

Admiral VREELAND. Three thousand three hundred miles from Hawaii.

The CHAIRMAN. I understand there is to be in conjunction with the development at Pearl Harbor a station at Guam supplemental but in cooperation with the Pearl Harbor project?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. That is being considered?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. You have asked about the Navy being defensive or offensive. If I understood you, it was defensive in the sense that we would use it for that purpose, but if trouble actually arose you wanted a Navy sufficient not to stay within the harbor and keep the other fleet out, but to go upon the high seas and fight wherever the necessity required?

Admiral VREELAND. That is absolutely correct.

Mr. ROBERTS. On the submarine proposition, I have heard somewhere, I can not tell whether I saw it in the paper or some one told me, that England had gone into the submarines much more actively than heretofore. Do you know anything about that? That they were going to lay down 60 submarines this coming year?

Admiral VREELAND. I have not heard that; no, sir. England now has building 22 submarines.

Mr. ROBERTS. Germany has taken up the submarine question at a later period than the other great powers?

Admiral VREELAND. Yes, sir; but she has taken it up very seriously.

Mr. ROBERTS. How many has she and how many does she contemplate building in the immediate future?

Admiral VREELAND. Twenty-four built and 12 building.

Mr. ROBERTS. You do not know what her proposals are for the next year or for the future?

Admiral VREELAND. No, sir. As elsewhere stated, she eventually will have 72.

Mr. ROBERTS. How about Japan? They went into the submarine question at the time of the Russo-Japanese War?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. Do you know how extensively they have been going on?

Admiral VREELAND. Very slowly. Japan has about 15 built and building.

Mr. ROBERTS. How about England?

Admiral VREELAND. England has 72 submarines and is building 22.

Mr. ROBERTS. How about France? France was one of the first great nations to go into the submarines?

Admiral VREELAND. France has gone in for destroyers and submarines more extensively than any other nation.

Mr. ROBERTS. Have you the figures of the submarines and destroyers in France?

Admiral VREELAND. Yes, sir; 81 destroyers built and 5 building, 139 torpedo boats, 75 submarines built and 18 building.

Mr. ROBERTS. With regard to the question of type of submarines, I understand France has a good many types?

Admiral VREELAND. Half a dozen at least.

Mr. ROBERTS. Germany is proceeding along one type?

Admiral VREELAND. We have no positive knowledge of German types. We have recently gone into two new types in our country.

Mr. ROBERTS. The Lake and Holland. Do you think it is a good policy to build up our submarine flotilla with many different types when you consider all of the questions of operation, spare parts, etc.?

Admiral VREELAND. No; I do not; but I think occasionally we have to try a type. We are building one Laurenti and one Lake.

Mr. ROBERTS. And if you find that type is not successful you would not get any more?

Admiral VREELAND. No, sir; just take its best points.

Mr. ROBERTS. We have what is called the Holland type boat with its improvements?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. How does that compare with the best type of submarine owned by any other nation on earth?

Admiral VREELAND. We do not know, sir. I understand that in France only those officers who are connected with the submarine service are allowed to go aboard them. They keep everything very secret. England has the Holland. We know little of the German types.

Mr. ROBERTS. You do not get knowledge of their operations?

Admiral VREELAND. No, sir; nothing worth having.

Mr. ROBERTS. What is the general opinion, that we have as good an appliance as any other nation?

Admiral VREELAND. I believe that is our opinion about everything we own, is it not?

The CHAIRMAN. Admiral, you said that there was some discussion with respect to the fortification of Guam. How far has that gone and what is its present status in the discussion and development?

Admiral VREELAND. I will send you full information.

Mr. KELLEY. Do we keep our secrets as closely guarded as the foreign navies do? You were just talking about France in regard to the submarines.

Admiral VREELAND. No; we do not. We publish a great deal of information for the benefit of our officers.

Mr. KELLEY. That is the reason?

Admiral VREELAND. Yes, sir.

Mr. KELLEY. That is in line with the general policy?

Admiral VREELAND. Yes, sir.

Mr. KELLEY. You spoke a moment ago of England not being able to send any ships over here, that not being a wise policy owing to the present conditions?

Admiral VREELAND. Yes, sir.

Mr. KELLEY. That was simply the conditions that exist at present between Germany and England and at any moment those conditions might change?

Admiral VREELAND. I think that is possible.

Mr. HENSLEY. Along the lines of the question asked by the chairman a few moments ago as to your meaning when you said that our Navy was built for the purposes of defense, that that included the ability on the part of the Navy not only to defend our coast line but to go out on the high seas and meet the enemy in battle, and your answer, as I recollect, was "Certainly"?

Admiral VREELAND. "Absolutely correct," was the expression used.

Mr. HENSLEY. Will you explain to me what injury the fleet can do lying away out in the ocean if we are absolutely protected along the coast line by the submarines, torpedo boats, and the like?

Admiral VREELAND. The quickest way to end the war would be to whip the enemy's battleship fleet.

Mr. HENSLEY. What could they accomplish?

Admiral VREELAND. A great deal of damage.

Mr. HENSLEY. Sitting away out there at a distance, they could not reach us?

Admiral VREELAND. Do you know the range of the modern gun?

Mr. HENSLEY. How does that answer the question? The opinion of Admiral Dewey and these other gentlemen is that the harbor can be absolutely protected against all the navies of the world, and the question of the chairman was not only for the protection of the coast line, but to go out on the high seas.

Admiral VREELAND. That is the best way to end the war—whip the fellow who threatens. I did not catch the intent of your preceding question, and I agree with you that the answer is inappropriate.

Mr. HENSLEY. Go out and fight?

Admiral VREELAND. Yes, sir.

Admiral VREELAND. Yes, sir.

Mr. HENSLEY. Even though they could stay out there such time as they desired?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. Our people would be in a happy frame of mind if they knew that the enemy's fleet was out a few miles from our coast, and that our ships were not going out there to look for them.

Mr. KELLEY. And with an extensive commerce on the high seas?

Admiral VREELAND. I am sorry to say that we have not very much.

Mr. WILLIAMS. To go across and attack other nations at their base, that would be an offensive navy?

Admiral VREELAND. Yes, sir; that is, if we unrighteously provoked the war.

Mr. WILLIAMS. And a defensive navy would be one to defend our rights in case of hostilities at home, in case of hostilities with a foreign country?

Admiral VREELAND. Yes, sir; but, again, a navy built for the Nation's defense may very properly take the offensive.

Mr. WITHERSPOON. I notice in your report that the position of the General Board is stated in these words:

The General Board does not believe the Nation stands ready to abandon or modify any of its well-established national policies, and repeats its position that the naval policy of the country should be to possess a fleet powerful enough to prevent or answer any challenge to these policies. The absolute strength necessary to accomplish this is a question that depends upon the national policies of prospective challengers and the force they can bring against us, and hence is relative, and varies with their naval policies and building program.

Does that state your views?

Admiral VREELAND. Yes, sir; that is straight.

Mr. WITHERSPOON. What are the national policies that we should be able to resist or prevent any challenge of?

Admiral VREELAND. There is one for which we need a very large navy, the Monroe doctrine.

Mr. WITHERSPOON. Is that the only one?

Admiral VREELAND. No; there are others.

Mr. WITHERSPOON. What are the others?

Admiral VREELAND. Have we abandoned the open door in China?

Mr. WITHERSPOON. No. I am trying to get at the policies you say we should have a fleet powerful enough to prevent or answer any challenge that is made. The Monroe doctrine is one.

Admiral VREELAND. Excluding the Asiatics.

Mr. WITHERSPOON. From California?

Admiral VREELAND. From our country. There are three big propositions that require force to maintain.

Mr. WITHERSPOON. Is that all?

Admiral VREELAND. They occur to me as the most important.

Mr. WITHERSPOON. Do you know of any reasonable apprehension that anybody is about to challenge the Monroe doctrine or the open-door policy or the exclusion of the Asiatics?

Admiral VREELAND. The exclusion of the Asiatics has been challenged.

Mr. WITHERSPOON. The Navy we have has been sufficient for all purposes on that line up to this time?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. That is one instance where your belief is that we should increase the Navy in order to prevent or answer any challenge to our policies?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. Have you any other reasonable apprehension that the other policies will be challenged by any nation, and that we should increase our Navy for the purpose of preventing or answering that challenge, any one except the one?

Admiral VREELAND. The Monroe doctrine.

Mr. WITHERSPOON. Do nations fight to maintain their rights without any reference to whether they are as powerful or less powerful?

Admiral VREELAND. I think the aggressor is generally the more powerful nation, because he thinks there is something to gain by warring, and the other party to the contest is forced into it.

Mr. WITHERSPOON. The aggressor, according to your idea, would go into war because he thought that he could win in the war; is that your idea?

Admiral VREELAND. He would not become the aggressor if he were sure of defeat.

Mr. WITHERSPOON. Do you believe, Admiral, that foreign Governments in providing for the size of their navies are influenced by the question of whether their navies shall become more powerful than ours alone, or do they consider the question of how they stand with reference to all nations?

Admiral VREELAND. With reference to all nations generally. Often with special reference to one or two.

Mr. WITHERSPOON. Assuming that you are correct in your idea that the aggressor in a war is governed by his idea of whether he can

win or not, would you not say that if Germany should ever contemplate going to war with us that she would seriously take into consideration what would be the probable effect of the result of that war, even if she could win, upon her relations to the other European nations that you say she has more apprehension of than us?

Admiral VREELAND. She would be guided somewhat by fear of other nations while at war with us.

Mr. WITHERSPOON. Not while at war, but if she thought that she could whip us on the seas and destroy our Navy, would she not still be restrained by the fear that she would lose so many of her ships in the engagement that it would make her unable to resist a conflict with other nations?

Admiral VREELAND. Yes, sir; she would be very largely governed by that.

Mr. WITHERSPOON. She would consider that very seriously before going into a war with us?

Admiral VREELAND. Yes, sir. I think that is one reason Germany is not trying to maintain equality with England. The thought you have in mind is doubtless the same as that expressed in the memorandum appended to the German naval bill, 1900:

Germany must have a battle fleet so strong that even for the adversary with the greatest seapower a war against it would involve such dangers as to imperil his position in the world.

And, again—

But even if it should succeed in meeting us with considerable superiority of strength; the defeat of a strong German fleet would so substantially weaken the enemy that in spite of the victory he might have obtained, his own position in the world would no longer be secured by an adequate fleet.

The CHAIRMAN. While Germany might be defeated, England would be crippled so that she could not rally?

Admiral VREELAND. Precisely.

Mr. WITHERSPOON. You said that the German fleet was more powerful than ours. Suppose she should send the whole fleet here and fight it on the sea with the American Navy, what do you think would be the condition of the German fleet when it got through sinking all of our ships?

Admiral VREELAND. If she had half a dozen ships left in that encounter she would be as powerful as if she had 100, because we would have none on the sea and she would have six battleships.

Mr. WITHERSPOON. And if she had six ships and we had none she would be all-powerful against us?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. How would she be with reference to France and England and all the other countries which you say she has more apprehension of than of us?

Admiral VREELAND. I can not answer that.

Mr. WITHERSPOON. Do you not think that there is intelligence enough in Germany to know that she would be very badly off?

Admiral VREELAND. We can not tell what is going to take place in European politics.

Mr. WITHERSPOON. Do you not think that there is enough intelligence in the German nation to appreciate what you have suggested here?

Admiral VREELAND. When we look at the combinations which took place in the Balkan War it is impossible to tell what combinations may take place in the future.

Mr. WITHERSPOON. I agree with you about that.

With regard to your proposition that the country which has the most powerful navy is the one that is more likely to be the aggressor—

Admiral VREELAND (interposing). Yes, sir.

Mr. WITHERSPOON (continuing). The idea I want to get from you is whether or not when a country goes on the idea that it is superior and becomes the aggressor, would it not take into consideration how it would be with reference to the other nations after it got through whipping this inferior fleet?

Admiral VREELAND. Very probably.

Mr. WITHERSPOON. You say that the German fleet is superior to ours. What really constitutes the superiority of one fleet over the other?

Admiral VREELAND. Types, numbers, and the men.

Mr. WITHERSPOON. Leaving out the men—suppose that the men are equal in skill and courage and all other elements of heroism—does not the superiority depend upon the probable destructive force of the guns?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. It does not make any difference what type the ship is, if the guns on it do not hit the other ships and do not have the destructive force they amount to nothing?

Admiral VREELAND. That is true.

Mr. WITHERSPOON. The whole thing depends upon the destructive force of the guns and the capacity to make them hit?

Admiral VREELAND. Yes.

Mr. WITHERSPOON. I notice, Admiral, in the Navy Yearbook, comparing our Navy with that of Germany—this table, as I understand it, includes ships that are actually built and those which are authorized—Germany has no guns on any of its ships of the caliber of 13 inches, and we have 20. Is that true?

Admiral VREELAND. Germany has no guns of the caliber of 13 inches?

Mr. WITHERSPOON. Yes, sir; 13 inches.

Admiral VREELAND. That is true at the present time.

Mr. WITHERSPOON. I am counting all the ships in both navies, either constructed and built or authorized.

Admiral VREELAND. I have no doubt that some of Germany's authorized ships will have 15-inch guns.

Mr. WITHERSPOON. But as to the 13-inch guns we have 20 and the German Navy has none. Is that true?

Admiral VREELAND. Yes; but our 13-inch is almost obsolete.

Mr. WITHERSPOON. When we come to the 14-inch guns this book shows that we have 54 and that Germany has none. Is that true?

Admiral VREELAND. No. Counting all ships authorized we have sixty-four 14-inch; but the statement that Germany has none is misleading; it is believed that the latest ships authorized will be armed with 14 or 15-inch.

Mr. WITHERSPOON. We have no ship that has 14-inch guns that is completed, but we have a number authorized and in the process of construction. This book shows the total number as 54.

Admiral VREELAND. Sixty-four is correct.

Mr. WITHERSPOON. You think that this Navy Year Book is incorrect?

Admiral VREELAND. It is unreliable so far as its information concerning German ships is concerned.

Mr. WITHERSPOON. Do not they know how many ships are building?

Admiral VREELAND. They make a statement in regard to Germany that is entirely misleading, and I doubt its accuracy.

Mr. WITHERSPOON. Do you mean that Germany is now constructing any vessel with 14-inch guns on it?

Admiral VREELAND. I do not know definitely, but I think very probably she is doing so—14-inch or larger.

Mr. WITHERSPOON. If you do not know definitely you can hardly say that this book is incorrect.

Admiral VREELAND. Yes, sir; I think I could. It probably got its information from the same source that I did; but it makes positive statements without full knowledge.

Mr. WITHERSPOON. This book states that among the German ships that are in process of construction they are constructing 16 ships with 15-inch guns. Do you know whether or not that is correct?

Admiral VREELAND. There are not 16 ships under construction.

Mr. WITHERSPOON. Assuming that this Navy Yearbook is correct in its statement that Germany is now building ships on which they will have sixteen 15-inch guns; that we are building ships on which we will have fifty-four 14-inch guns, that Germany has none; that we have twenty 13-inch guns and Germany has none, would you say that that statement, if true, would show that the German Navy is superior to ours?

Admiral VREELAND. That statement by itself would mean that our Navy is superior.

Mr. WITHERSPOON. Admiral Twining stated before this committee last year that a 14-inch gun had a destructive power 50 per cent greater than a 12-inch gun, and that it shoots with 30 per cent more accuracy. Do you agree in that statement?

Admiral VREELAND. I should say, coming from the Chief of the Bureau of Ordnance, that it was correct.

Mr. WITHERSPOON. You have never gone into that?

Admiral VREELAND. It would require a table of ballistics.

Mr. WITHERSPOON. Do you think the statement of Admiral Twining in that regard was probably correct?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. You agree with him so far as you know, without examining the tables and refreshing your memory?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. You said that assuming that the showing in this Yearbook as to the number of 13, 14, and 15 inch guns is correct it would show that our Navy was superior. Assuming then also that in the German Navy they have one hundred and seventy-four 12-inch guns and we have 148, giving them in 12-inch guns 26 more than we have, and considering our superiority in 13 and 14 inch guns, and considering the probable accuracy of the statement of Admiral Twining that a 14-inch gun shoots with 50 per cent more destructive power and with 30 per cent more accuracy what would you say as to the relative strength of the two navies, assuming all that to be true?

Admiral VREELAND. I would say that the German Navy is more powerful than ours.

Mr. WITHERSPOON. You would think that their superiority in the number of twenty-six 12-inch guns would overcome our superiority in the 13 and 14 inch guns?

Admiral VREELAND. We have not any 13-inch guns except on ships that are obsolete. Using only your figures, I would say that the argument was on your side.

Mr. WITHERSPOON. You and I agree; I believe we have the best Navy on earth. You state in your report that the men are more important than the ships, do you not, in the report of the General Board?

Admiral VREELAND. There is something very like that in the report.

Mr. WITHERSPOON. Does it not mean exactly that?

Admiral VREELAND. I think they stated that just for the moment the question of personnel is of more importance than the question of matériel.

Mr. WITHERSPOON. I want to read what you state in your report:

What that policy should be is stated broadly in paragraph 3—

That is the paragraph I read you a while ago.

The building and maintenance of a fleet powerful enough to prevent or answer any challenge to our national policies. To arrive at any concrete formulation of a naval policy, for recommending to the department for presentation to Congress and the country, the General Board invites attention to the following fundamental facts:

- (a) The "power" of the fleet consists of two elements, its personnel and its matériel
- (b) Of these two elements the personnel is of the greater importance.

Admiral VREELAND. That is right.

Mr. WITHERSPOON. That is true?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. The fact is it does not make any difference what sort of a gun you have or how far it will shoot; that amounts to nothing unless the men have the skill to make it hit?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. All these officers have told us and have been telling us that we have not enough officers to man the ships we have.

Admiral VREELAND. That is absolutely correct.

Mr. WITHERSPOON. I want to give you not only plenty of officers, but I want to give you officers who have more skill than any officers on earth, so when they shoot at the enemy they will hit him and conquer him.

Admiral VREELAND. Do you not see that by your questions you put me in a false light? You have made me say that the German Navy is inferior to the United States Navy; that would be the inference drawn.

Mr. WITHERSPOON. On the assumption that the figures given in this book are correct, but I did not commit you to the proposition that this book is correct.

Admiral VREELAND. The inference would be that the German Navy was inferior to ours, and that is the inference which I wish to correct.

Mr. WITHERSPOON. If you want to correct that statement now, Admiral, you are at liberty to do so.

Admiral VREELAND. I think it has been corrected.

Mr. WITHERSPOON. Admiral, you were asked about the number of navy yards and naval stations that we have. I will ask you if there is not an immense duplication of expense in the number of the navy yards?

Admiral VREELAND. Fewer yards would be more economical, but we have the yards and need them.

Mr. WITHERSPOON. That is what I am asking you about.

In each of these navy yards and stations we have to-day a power plant, have we not?

Admiral VREELAND. Yes, sir.

Mr. WITHERSPOON. If we had one or two navy yards, would not one power plant be sufficient for the whole thing?

Admiral VREELAND. If the plant combined all the units in the yard.

Mr. WITHERSPOON. Have you any idea, Admiral, how much the duplication of these power plants increases the expenses of the Navy?

Admiral VREELAND. I have never figured that out. I can see, roughly, that it would increase the expense.

Mr. WITHERSPOON. And greater?

Admiral VREELAND. I have not gone into the figures sufficiently to say.

Mr. WITHERSPOON. Now, must not each navy yard be supplied with the same machines or machinery?

Admiral VREELAND. Nearly so.

Mr. WITHERSPOON. Then there is a duplication of machines in proportion to the number of different yards, is there not?

Admiral VREELAND. No; I would not say that. I would not say that was the case because I think it very probable, in fact I know, that the machines in New York can not do all the work on the Atlantic coast.

Mr. WITHERSPOON. Well, I am assuming that you had one large enough to do all the work?

Admiral VREELAND. Oh, yes.

Mr. WITHERSPOON. Then there would not be any duplication of machines, would there?

Admiral VREELAND. No; there would not be any useless duplication of machines.

Mr. WITHERSPOON. Well, is not that duplication of machines an immense expense to the Navy?

Admiral VREELAND. It is an additional expense, but I would not say that it is an immense expense, because I do not know.

Mr. WITHERSPOON. Well, I have walked through all the buildings of the Navy from one end of the Atlantic coast to the other, and it seems to me that nine-tenths of all the machinery I saw was absolutely idle. Now, is it not a fact that that is an immense and useless investment of capital in machinery that is idle?

Admiral VREELAND. No; I can not say that it is useless, because the machine is undoubtedly used at times when no other machine will take its place. Is not that the case?

Mr. WITHERSPOON. But if you had one navy yard where all the work could be done, that machine would be in use all the time instead of just occasionally, would it not?

Admiral VREELAND. Yes, generally; not all the time.

Mr. WITHERSPOON. And would not that save an immense amount of expense?

Admiral VREELAND. Well, I would not say an immense amount of expense, but it would save some expense.

Mr. WITHERSPOON. Do you think it would be a small amount or a large amount?

Admiral VREELAND. I could not say. I have not gone into the figures. I can not say that there would be a saving, whether large or small.

Mr. WITHERSPOON. Now, Admiral, we have 22 or 23 dry docks. Suppose we had one navy yard large enough to repair and construct all the ships in the Navy. How many dry docks would it take to serve it?

Admiral VREELAND. I could not say.

Mr. WITHERSPOON. You have not gone into that?

Admiral VREELAND. No; I could not say, but are these docks of the size that will take the largest vessel or just the size to take a tugboat?

Mr. WITHERSPOON. My understanding is that we have three dry docks now that are large enough to accommodate the largest ships built or authorized, and that there are only eight ships authorized now that could not be accommodated in dry dock other than these three largest ones. But the question I meant to ask you was that if we had one navy yard sufficient to do all the work of the Navy and you were to build dry docks, some larger and some smaller, the larger ones sufficient to accommodate all the larger ships and the smaller ones sufficient to accommodate all the other ships, how many dry docks would it take?

Admiral VREELAND. I could not say offhand.

Mr. WITHERSPOON. You have not studied that question? Well, is it not a fact that the General Board has ever gone into the question of conducting our Navy so as to make the people's money get its full worth?

Admiral VREELAND. We have discussed this very question we are now discussing.

Mr. WITHERSPOON. Admiral, it appears from this Navy Yearbook that in the last 12 years we have spent a billion dollars more on our Navy than Japan. It also appears that we have spent \$11,000,000 a year for the last decade more than Germany and Japan put together, and \$6,000,000 more than France and Japan put together. Has your board ever considered the causes of that excess?

Admiral VREELAND. Yes, sir: somebody was reading the other day for the benefit of the General Board the wages paid in Japan, and in about 20 trades the highest wage paid was 40 cents a day.

Mr. WITHERSPOON. Is that the reason the board assigns for it?

Admiral VREELAND. That is a reason, undoubtedly, why we spend so much more money on the Navy than Japan does.

Mr. WITHERSPOON. Now, Admiral, the highest expenditure that Germany has ever made is \$110,000,000 and ours last year was \$140,000,000, or \$30,000,000 more than Germany's highest expenditure. Now, as I understand from the report of the Chief of the Bureau of Supplies and Accounts, the total amount that we paid for labor in maintaining our Navy is \$22,000,000, and therefore if you were to deduct that \$22,000,000 from the \$140,000,000, knocking

out all the labor cost in the American Navy, it would still put ~~us~~ millions of dollars beyond Germany. Now, how, then, can you ~~ex-~~plain the great difference on account of labor?

Admiral VREELAND. I think I can answer that by inserting ~~in~~ my hearings the rates of pay of the enlisted men in the German ~~Navy~~ Navy as compared with the rates in our Navy.

Mr. WITHERSPOON. But if the total amount paid for labor wa ~~as~~ taken out of ours it would still be less for Germany than for us.

The CHAIRMAN. He spoke of the enlisted men in addition to labor ~~er~~ r.

Mr. WITHERSPOON. What is the pay of the German laborers?

Admiral VREELAND. I should say about one-third less than ours ~~is~~ s. If I have permission I will put the Navy pay in the hearings.

The CHAIRMAN. Yes; put that in the hearings.

Admiral VREELAND. And also the rate of pay in Japan?

The CHAIRMAN. Yes, sir.

Table of annual pay of petty officers and men.

Office of Naval Intelligence, Jan. 30, 1914.]

UNITED STATES.		GERMANY.	
Chief petty officer.....	\$600-780	Sergeant major.....	\$21 18
Petty officer:		Vice sergeant major.....	18 18
First class.....	480-600	Senior mate.....	18 18
Second class.....	420	Mate.....	13 13
Third class.....	360	Senior seaman.....	9 9
Seaman.....	288-312	Able seaman.....	9 9
Ordinary seaman.....	228	Ordinary seaman.....	63- 6 7
Apprentice seaman.....	192	Ship's boy.....	3-4
ENGLAND.		JAPAN.	
Chief petty officer (average)...	\$355	Chief petty officer.....	109-182
Petty officer:		Petty officer:	
6 years.....	296	First class.....	85- 91
3 years.....	282	Second class.....	67- 73
1 to 3 years.....	266	Seaman:	
Leading seaman.....	192-207	First class.....	47
Able seaman.....	148-162	Second class.....	40
Ordinary seaman.....	111	Third class.....	35
Boy, first class.....	52	Fourth class.....	27
		Fifth class.....	16

NOTE.—The above figures represent the base pay, and do not include clothing and other allowances.

Japan—Wages of laborers, 1911.

[Average daily wages (yen).]

Weaver, male.....	\$0. 43	Cart maker.....	\$0. 69
Tailor (for Japanese dress).....	. 58	Harness maker.....	. 70
Tailor (for European dress).....	. 85	Lacquerer.....	. 68
Shoemaker.....	. 65	Jeweler.....	. 66
Confectioner.....	. 45	Blacksmith.....	. 70
Tobacco cutter.....	. 62	Potter.....	. 63
Sake-brewer, monthly.....	17. 01	Gardener.....	. 83
Carpenter.....	. 83	Fishermen.....	. 59
Plasterer.....	. 86	Farm laborer.....	. 42
Stonecutter.....	. 94	Farm laborer, a year, male.....	49. 81
Sawyer.....	. 78	Paper maker.....	. 44
Tile roofer.....	1. 00	Printer.....	. 50
Bricklayer.....	1. 06	Day laborer.....	. 56
Shipbuilder.....	. 86	Male servant, monthly.....	4. 65
Cabinetmaker.....	. 79		

A yen is equivalent to approximately 50 cents United States money.

The above is taken from the Japan Yearbook, 1913. The compilers are Y. Takenob, professor of the Waseda University and late of the Japan Times, and K. Kawakami.

Mr. WITHERSPOON. Do we pay our enlisted men more than they do in the German Navy?

Admiral VREELAND. Yes.

Mr. WITHERSPOON. Do we pay our officers more?

Admiral VREELAND. Yes.

Mr. WITHERSPOON. Then why is it that the officers are calling on us to make increases in their pay if they are already getting more?

Admiral VREELAND. Have there been any recent requests for increases?

Mr. WITHERSPOON. Yes. I see in reading up on this subject that the statement is made that we ought to provide a fund from which our officers can entertain; that now they have to pay it out of their salaries. It looks to me like if their salaries already exceed those paid by foreign Governments they are about on an equality with foreign officers.

Admiral VREELAND. Well——

Mr. FARR (interposing). Do foreign Governments make an allowance for entertaining?

Admiral VREELAND. Yes, sir.

Mr. FARR. Separate from salary?

Admiral VREELAND. Yes, sir.

Mr. FARR. And this Government does not?

Admiral VREELAND. It does not.

Mr. ROBERTS. Admiral, turn to page 838 of the Yearbook, showing the number of battleships and armored cruisers of various countries, and assume that the number of guns of different calibers therein stated is correct. From this table it appears that the United States Navy has twenty 13-inch guns and fifty-four 14-inch guns, a total of 74; that the Italian Navy has ninety-three 13-inch guns and thirty-six 15-inch guns, a total of 129. On that basis of guns is not the Italian Navy more powerful than the United States Navy?

Admiral VREELAND. As you put it, yes, sir. The Italian Navy, however, is not as powerful as ours.

Mr. ROBERTS. But on that basis of caliber of guns it is more powerful?

Admiral VREELAND. Yes; I understand.

Mr. ROBERTS. Now, the United States has twenty 13-inch guns, fifty-four 14-inch guns, and Japan has no 13-inch guns, but eighty 14-inch guns. On that basis of big guns Japan is more powerful than the United States.

Admiral VREELAND. It would look that way.

Mr. ROBERTS. Now, the question was asked a short time ago as to the skill of men and the usefulness of the men. I want to ask you this question: If you had the most skillful gunners in the world on an antiquated ship with antiquated or defective guns, you would not expect any better results from them as against the modern ship with modern guns?

Admiral VREELAND. No, sir; I should not look for any great results.

Mr. ROBERTS. Now, on the comparison of gun power as giving the relative strength of navies, I want to ask you, Admiral, this question: Does not the question of how those guns are carried—in other words, the platform or the ship upon which those guns are carried—have a

material influence in arriving at the comparative strength of two navies?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. Assuming, for instance, that one navy had the same number of 15-inch guns as its neighbor, but one carried its guns on a defective carriage while another navy had ten or twelve or more 15-inch guns to each ship, properly mounted, that would alter entirely the status on the two ships. So that you could not take as a fair basis of comparison the number of guns of different caliber owned by different navies.

Admiral VREELAND. No; you could not.

Mr. ROBERTS. Something was said about these 13-inch guns; as a matter of fact, they are practically obsolete or antiquated?

Admiral VREELAND. Yes, sir.

Mr. ROBERTS. And they would not be at all effective against modern 14-inch or 15-inch guns?

Admiral VREELAND. No, sir; they would not.

Mr. ROBERTS. So that our twenty 13-inch guns are not any particular element of strength to our Navy?

Admiral VREELAND. They are not.

Mr. ROBERTS. And is it not a fact that those 13-inch guns are carried on antiquated mountings, which is a factor in determining the relative strength of navies?

Admiral VREELAND. Yes, sir; that is a factor.

Mr. WITHERSPOON. Admiral, which is the most antiquated, the *Oregon*, *Massachusetts*, *Indiana*, *Iowa*, or the *Tallahassee*?

Admiral VREELAND. The *Tallahassee*. Of course, when you say "most antiquated" I understand you to mean least efficient.

Mr. WITHERSPOON. Mr. Roberts asked you to compare our Navy with that of Italy, on the supposition that this Yearbook [indicating] is correct in stating that Italy has ninety-three 13-inch guns and thirty-six 15-inch guns, and that we have only twenty 13-inch guns and fifty-four 14-inch guns; but he left out of consideration the fact that this book shows that we have one hundred and forty 12-inch guns and that Italy has none. If you consider the fact that we have one hundred and forty 12-inch guns, and they have none, how would each country stand then?

Admiral VREELAND. It would look to be very much in our favor.

Mr. WITHERSPOON. Yes; and the only way you can make Italy out to be superior to our country is by leaving out a part of the facts, is it not?

(No answer.)

Mr. ROBERTS. I did put the 12-inch guns in.

The CHAIRMAN. Admiral, I am going to ask you one question before we adjourn. Will you please put in the record the reasons why you state that the German Navy is superior to the American Navy?

Admiral VREELAND. Yes, sir.

The CHAIRMAN. Gentlemen, we will have with us to-morrow the Secretary of the Navy, and I should be glad to have the committee meet at 10.30 o'clock.

Number and displacement of warships, built and building, of 1,500 or more tons, and of torpedo craft of more than 50 tons, United States and Germany.

[Jan. 30, 1914.]

Type of vessel.	Germany.				United States.			
	Built.		Building.		Built.		Building.	
	Num- ber.	Tons.	Num- ber.	Tons, es- timated.	Num- ber.	Tons.	Num- ber.	Tons, es- timated.
Battleships (dreadnaught type) ¹	13	285,670	6	162,300	7	162,650	5	144,800
Battleships (predreadnaught) ²	20	242,800			24	335,284		
Coast-defense vessels ³	2	8,168			4	12,900		
Battle cruisers ⁴	4	88,749	3	84,000				
Armored cruisers.....	9	94,245			11	149,295		
Cruisers ⁵	40	145,847	4	21,886	14	66,410		
Torpedo-boat destroyers.....	130	67,094	12	7,680	46	29,862	16	17,042
Torpedo boats.....					18	3,601		
Submarines.....	24	10,840	12	9,800	28		22	
Total tons built and total tons building.....		943,413		285,466		760,002		161,842
Total tons built and building..		1,228,879				921,844		

¹ Battleships having a main battery of all big guns (11 inches or more in caliber).

² Battleships of (about) 10,000 or more tons displacement, whose main batteries are of more than one caliber.

³ Includes smaller battleships and monitors.

⁴ Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery and a decrease in armor protection.

⁵ All unarmored warships of more than 1,500 tons are classed as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted, because all cruisers, except the smallest and oldest, now have protective decks.

Present order (tonnage completed):

Germany.....	943,338
United States.....	760,002

As would be the case if vessels now building were completed:

Germany.....	1,228,208
United States.....	921,844

The following vessels are not included in the tables:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years.

Torpedo craft over 15 years old.

Those not actually begun or ordered, although authorized.

Transports, colliers, repair ships, torpedo depot ships, or other auxiliaries.

Vessels of less than 1,500 tons, except torpedo craft.

Torpedo craft of less than 50 tons.

Vessels undergoing trials are considered as completed.

The following tables give the relative values of gun and torpedo fire as the two fleets stand to-day. Because of lack of knowledge of Germany's future armaments, it is impossible to furnish comparative data on ships building or authorized.

BROADSIDE FIRE.

The total weight of broadside fire of the main battery guns in the predreadnought ships is: United States, 94,880 pounds; Germany, 47,190 pounds. The muzzle energies of these guns, however, a more exact basis of comparison, is: United States, 3,995,092 foot-tons; Germany, 2,269,842 foot-tons. The preponderance is therefore not in the proportion of 2 to 1, but of 9 to 5, and even this is discounted by the superiority of the German ships in torpedo fire, represented by effective torpedo tubes, as follows: United States, 29; Germany, 65.

The total number of main battery broadside guns in the dreadnought ships is: Eight, United States: Twenty 14-inch, sixty-four 12-inch; total, 84.

Seventeen, Germany: Eighty-two 12-inch, seventy 11-inch; total, 152.

The total number of torpedo tubes that can fire on one side is: Eight ships, United States, 10 tubes; 17 ships, Germany, 59 tubes.

The total weight of metal in one main battery broadside is: Eight, United States, 83,680 pounds; 17, Germany, 129,542 pounds.

The total muzzle energy of one main battery broadside is: Eight, United States, 4,512,456 foot-tons; 17, Germany, 8,939,815 foot-tons; a preponderance of 2 to 1 in favor of Germany.

Combining the foregoing, the total muzzle energy of one main battery broadside of all battleships and battle cruisers is, spring of 1914: United States, 8,507,548 foot-tons; Germany, 11,209,657 foot-tons; a preponderance of 11 to 8 in favor of Germany. The total broadside torpedo fire is: United States, 39; Germany, 124.

(Thereupon, at 1.45 p. m., the committee adjourned until tomorrow, Thursday, January 29, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Thursday, January 29, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE NAVY.

The CHAIRMAN. Gentlemen of the committee, we have with us this morning the Secretary of the Navy.

Mr. Secretary, the committee will be pleased to hear from you such suggestions as you may have to offer relative to the welfare and condition of the Navy, and I will say to you that you can pursue your own method of presenting your views to the committee.

Secretary DANIELS. Mr. Chairman and gentlemen of the committee, I would like to bring up first the conservative building program which we have recommended. You will remember that in the estimates we ask for the building of two dreadnoughts, eight destroyers, and three submarines. This is not a large program. In fact, when you compare it with the recommendations of the naval statesmen who compose the General Board it may be called rather a small program.

Mr. HENSLEY. Mr. Secretary, how did you characterize the General Board—as “statesmen”?

Secretary DANIELS. I said the naval statesmen who make up the General Board.

Mr. BRITTEN. I believe the General Board desired four battleships, did they not?

Secretary DANIELS. Yes.

Mr. BRITTEN. And they recommended that number?

Secretary DANIELS. Yes.

Mr. BRITTEN. In recommending a two-battleship program was the change made with a view to economy or did your department feel that two battleships were all that were necessary?

Secretary DANIELS. If we are going to build a great Navy in the modern sense of a great Navy—in other words, if we felt that this country ought to increase its Navy in proportion to the other great navy-building nations—we would have recommended four, but we were chiefly influenced in that recommendation by the condition of the Treasury. We felt that two new dreadnoughts would make the Navy strong enough for any needs that we could foresee. I did not feel that the revenues would permit four battleships.

Mr. BRITTEN. You did feel, however, that the revenues would permit, safely and consistently, two battleships?

Secretary DANIELS. We felt that that was the minimum of increase if we were to keep the Navy up to an efficient standard.

Mr. HENSLEY. Do you mean to be understood as saying that if our revenues were sufficient you would have made your recommendation to this committee and Congress agree with the recommendation of the General Board?

Secretary DANIELS. If I thought this country had ample revenues to make the Navy, as many people believe it should be, as big as any navy in the world, that—

Mr. HENSLEY (interposing). Do you believe that the needs of the country require any such Navy?

Secretary DANIELS. I think that two battleships will meet the needs of the country.

Mr. HENSLEY. You have been engaged in the newspaper business, I believe?

Secretary DANIELS. Yes.

Mr. HENSLEY. What paper have you been the proprietor or owner of?

Secretary DANIELS. The Raleigh (N. C.) News and Observer.

Mr. HENSLEY. The policy of your paper for some years past has rather been in opposition to a big Navy?

Secretary DANIELS. If you will read the paper carefully you will find that at the last Congress, when the matter was up, I very earnestly advocated two battleships.

Mr. HENSLEY. A few years ago when the question of increasing the units was under consideration you even criticized some of the members of the North Carolina delegation for having supported it?

Secretary DANIELS. Not a two-battleship program.

Mr. HENSLEY. When was that?

Secretary DANIELS. I criticized the policy, and I do now—a policy that puts us in competition with any nation which, as I regard it, is going wild on building overlarge navies.

Mr. HENSLEY. That is the situation with all the nations when you resolve it down to the last analysis.

Secretary DANIELS. That is the reason in my recommendation that I did not follow the four-battleship program.

Mr. HENSLEY. You appreciate, Mr. Secretary, that in the last Congress there were four caucuses on this proposition, and that the first caucus voted by a tremendous majority against any battleship at that time?

Secretary DANIELS. I do not recall that.

Mr. HENSLEY. And afterwards the big Navy men succeeded in bringing about another caucus and again they reaffirmed that decision, and the fourth caucus on a yea-and-nay vote stood for no battleships, but they finally yielded at the solicitation of those who thought we should have an increase and compromised on one battleship.

Secretary DANIELS. If that is correct, I think it was a bad policy.

Mr. WITHERSPOON. Mr. Hensley, I would like to correct you there. You stated that on the fourth caucus we decided to have one battleship. What that caucus did was simply to give permission to certain members who might desire it to vote for as many as one. They did not reverse their decision at all.

Mr. HENSLEY. I stand corrected. It was as Judge Witherspoon recalls, and on the floor of the House they voted for one battleship as against two.

Secretary DANIELS. Since you ask me about it, during the time the matter was pending in Congress I wrote to the North Carolina Members in Congress urging them to support two battleships. I thought that was the correct policy. I think that caucus, if it took that action, did not take wise action.

Mr. HENSLEY. Notwithstanding your position taken heretofore in opposition to the tremendous increase in the Navy?

Secretary DANIELS. A tremendous increase in the Navy, yes; but I never took any position—

Mr. HENSLEY (interposing). I want to be fair and liberal.

Secretary DANIELS. I took the same position then that I hold now. I do not believe in a tremendous increase of the Navy, but I believe in a steady, uniform increase.

Mr. HENSLEY. Mr. Secretary, do you appreciate the fact that we have within the last 10 years expended something like a billion dollars more than Japan to support our Navy?

Secretary DANIELS. I have not those figures.

Mr. HENSLEY. You have not those figures? Do you realize, Mr. Secretary, that the Federal tax upon the American people has reached the enormous sum of from \$50 to \$60 per family per year?

Secretary DANIELS. I know that.

Mr. HENSLEY. And the military branch of the Government—the Navy with the Army and for past wars—represents 70 to 71 per cent of that tax?

Secretary DANIELS. I would like to see that decreased, but I would not like to see it decreased to the point of making this country unable to have an adequate and efficient Navy.

Mr. HENSLEY. Right there, is it not a fact that always heretofore, even when we did not have the strength we have to-day, when we had untold wealth, but undeveloped, we have always been equal to the occasion, and now, since we have billions of wealth and something like 100,000,000 of people and a stronger Navy than we ever had we appear to be alarmed and we are in this mad rush with the other nations?

Secretary DANIELS. I think that my recommendation shows that we are not in any mad competition. On the contrary, we are deliberately saying that we do not believe in this mad rush or this wild competition, and we take the conservative middle ground that we will not join them, but we will not go backward. Take the ships we have to-day. The life of a first-class battleship, you may say generally, is 20 years. We have battleships now that, in a sense, are nearly obsolete. If you do not build new battleships all the time to take the place of those as they retire you would soon have a Navy of no value. I wish to make conservative progress, and therefore I am standing as Secretary of the Navy for two battleships exactly as I stood two years ago when I was a private citizen.

Mr. HENSLEY. Did you read the resolution which I introduced in Congress?

Secretary DANIELS. I did.

Mr. HENSLEY. What is your position upon that resolution?

Secretary DANIELS. In my report—

Mr. HENSLEY (interposing). I beg your pardon but I would like to ask you just one other question. It has been asserted by Senator Burton, of Ohio, and I have not heard anybody dispute the proposition, that within the last 30 years the naval expenditures of this country have increased something like ten times. You appreciate that 30 years is only a very short span in the history of a country, and if that has been our history is it not a fair criterion to judge the future by, and if it is can not you readily see that we will be expending in 30 years from \$1,400,000 to \$1,500,000 in support of this one branch of the Government. If that be true—

Secretary DANIELS (interposing). I do not think so.

Mr. HENSLEY (continuing). To what end are we going and where are the American people, the taxpayers, going to get relief?

Secretary DANIELS. I want that relief just as much as you do. I think there is a way to get it, but we can not get it alone. I think if you would add to your resolution that this Congress and this Government desire to confer with the navy-building nations for an international conference to discuss the wisdom of putting an end to competitive navy-building I think you can reach it. The Bible says, "No man liveth unto himself," and this Nation can not make its policy regardless of the balance of the world.

Mr. HENSLEY. As the Secretary of the Navy have you taken any steps with any of the other heads of the departments to bring about that situation, a meeting of the representatives of other nations, so that we can reach that glorious condition?

Secretary DANIELS. The question is how it should be inaugurated.

Mr. HENSLEY. You do not mean to say that the declaration should be coupled with the resolution in order to get you to act in your department?

Secretary DANIELS. As far as my recommendation is concerned, I did not make it to Congress or to the President, but I made it in this report, which will go to both. I made it for discussion, and perhaps this is not the best way. It seems to me that in your resolution, instead of asking for a vacation, which is merely temporary and very difficult—for example, you say stop building any—

Mr. HENSLEY (interposing). Do you not think that would end the thing entirely when the people saw how nonsensical the thing was, and that our relative positions were about the same?

Secretary DANIELS. No. Every other country has contracts for building in the next year and you can not recall them.

Mr. HENSLEY. But the authorizations for building, Mr. Secretary?

Secretary DANIELS. You mean you would not authorize anything else?

Mr. HENSLEY. Yes.

Secretary DANIELS. And stop still?

Mr. HENSLEY. In conformity with the suggestion which has been made.

Secretary DANIELS. I think that would be a very unwise policy. I think that you ought to change it to say that it is the sense of the American Congress and of our Government that this mad rush of building great navies, each nation trying to build one bigger than the other, has become too great a burden on the world and should be stopped, and that we stand ready to invite all of the nations of the

world to come into conference with us to discuss naval policies. I think that would do a great deal of good and bring practical results.

Mr. HENSLEY. You do not mean to say that Congress should take such a stand in order that you and the other departments would act in that regard?

Secretary DANIELS. I think it would express the sentiment of the Nation better than if done by an executive department.

Mr. HENSLEY. You would feel rather bound to adhere to the stand taken by Congress—that is, you would regard it as being a very strong reason for you to take the initiative?

Secretary DANIELS. The question with me is whether it would be better. I have never talked to the President about this policy, because there have been so many other things uppermost, but it seems to me that Congress has taken the initiative, passed a resolution for a holiday, which I do not think would meet what you desire, and would be temporary and would put us at a disadvantage while all the other nations were building.

Mr. HENSLEY. How would it put us at a disadvantage?

Secretary DANIELS. It would not do. But when you come to ask them to cease, they have already made a program for work and I do not think they would accede to it; but if we say, "now, this Congress is not going in for a very big increase, it is adding only two battleships, we do not wish to be in the attitude of stooping to have this tremendous burden rolled upon our shoulders ever increasing and increasing—we do not think it is good for any of us, and therefore let us get together about this matter."

Mr. HENSLEY. You are familiar with the correspondence which is on file with the Secretary of State concerning the disarmament of the Great Lakes?

Secretary DANIELS. Yes.

Mr. HENSLEY. The great work of the Jefferson administration?

Secretary DANIELS. I am.

Mr. HENSLEY. There the Secretary of State and others did not wait for any act of Congress; they took up the matter and persevered in the effort for three long years and finally succeeded in bringing about the disarmament of the Great Lakes.

Secretary DANIELS. That was a triumph of diplomacy and statesmanship.

Mr. HENSLEY. Do you not think that if we had had battleships upon the Great Lakes all these years that the chances are we would have been at war with Great Britain?

Secretary DANIELS. I think it is possible. It was one of the greatest achievements of statesmanship which brought about that agreement.

Mr. HENSLEY. Have you ever thought that the prepared state which you are urging all the time tends to incite, bring about, and precipitate difficulty?

Secretary DANIELS. I think it would tend to incite and bring about difficulty if the men who had charge had a warlike spirit.

Mr. HENSLEY. Have they not a warlike spirit?

Secretary DANIELS. I think not. On the contrary I think you may say that to be prepared means rather encouraging peace.

Mr. HENSLEY. Mr. Secretary, we have been taking the recommendations and considering the recommendations made by the general

board and each one of those gentlemen when they have appeared here have invariably told us that he was studying it entirely and exclusively from a military standpoint and not from the standpoint of a citizen of the country.

Secretary DANIELS. You must remember that the business of every sailor and soldier is to be prepared. You take the General Board, which is composed of naval officers; it is their business, and it is their duty to say to the Secretary of the Navy, "We think such things should be done," and if war comes it is their business to be ready for war, not that they want war, not that they would incite war, and not that they do not discourage war. You take the naval officers to-day in Haiti, Santo Domingo, and Mexico, if they were not very wise diplomats, as well as sailors, we might be involved in great trouble. They try to keep out of trouble, but if it comes they must meet it.

Mr. HENSLEY. On yesterday a member of the general board said that he could see no objection to men carrying weapons in a civilized country.

Mr. BRITTEN. The admiral said that he would have that stricken from the record.

Secretary DANIELS. That is an individual opinion.

Mr. HENSLEY. What is your view?

Secretary DANIELS. I do not think so.

Mr. HENSLEY. You believe, like myself, that we should absolutely prevent the carrying of weapons, do you not?

Secretary DANIELS. In my town I do not think that I should take the law in my own hands. I think we should have a police force sufficient to protect us.

Mr. HENSLEY. Have you any plan yourself that you propose to take up with the foreign nations for the purpose of bringing about relief to the American people of this galling tax burden?

Secretary DANIELS. I think that is a matter we are jointly interested in. I think that if the executive departments of the Government were to ask for this conference, which I proposed in my report, it would have much more weight if they were acting in response to a resolution of Congress; and that action should not be taken alone, but by all the departments of the Government, and I am very earnestly in favor of that.

Mr. HENSLEY. You say it would be well if Congress would pass a resolution such as you have indicated?

Secretary DANIELS. I think it would be admirable.

Mr. HENSLEY. And that it would further this cause?

Secretary DANIELS. Undoubtedly.

Mr. HENSLEY. How long have you been of that opinion?

Secretary DANIELS. I have never discussed this particular phase of it, because my duties did not call me to it.

Mr. HENSLEY. You recall receiving a letter from me asking for an interview along that line?

Secretary DANIELS. I remember having some correspondence with you in line with your resolution.

Mr. HENSLEY. Asking you to give me an appointment, any time to suit your convenience, so that we could discuss the proposition?

Secretary DANIELS. No; I did not receive that.

Mr. HENSLEY. You did not receive that?

Secretary DANIELS. No; I thought when you introduced your resolution, when it passed by such a large majority, expressive of the feeling in this country, that we should not let militarism go much further, and I wrote to you.

Mr. HENSLEY. Yes; and I wrote you, asking for an engagement.

Secretary DANIELS. I did not get that letter. I will look that up. I think all this discussion and Winston Churchill's statement advocating a naval holiday and your resolution cooperated to induce me to make this recommendation and to put in my report my feeling about it, which is very strong, that this country should earnestly urge a conference looking to an agreement to end competition in battleship construction.

Mr. HENSLEY. Do you think that England is going to adhere to her former policy and continue building?

Secretary DANIELS. I think this: I think that in England and in this country there is a very wide division of opinion. I think that men of the Lloyd George type feel that what we call excessive competition should cease, but I do not think that England or America or any other country can do it alone.

Mr. HENSLEY. But, Mr. Secretary, you appreciate the fact that there is such a sentiment in England to-day, if we can judge by newspaper reports, as never existed before to cease this extension, and also in Germany?

Secretary DANIELS. I think the public opinion of the world is coming around to settling all differences by arbitration and that we ought to do everything we can to further it.

The opinion in England is well expressed in a recent speech in Parliament by Mr. Winston Churchill, who said:

I wish to bring home the fact that in these questions you have to draw a line between the extreme views of irresponsible people and what is reasonable and sober provision for the security of the country.

At the same time he proceeded to give the following information in regard to what is considered "reasonable and sober" in England, which does not indicate that there is any marked let-up in building:

According to the latest figures supplied me at the beginning of this month, we are due to receive a torpedo-boat destroyer, on the average, one a week for the next 9 months, besides a very large delivery of submarines. During the next 12 months we shall receive, on the average, a light cruiser every 30 days, and—this is the most impressive fact of all—during the next 18 months we shall, on the average, receive a superdreadnaught of the latest possible type and of the highest possible cost every 45 days. Full crews will be available for all this fleet as it is completed without laying up any serviceable vessel of real value.

Mr. HENSLEY. Where would this department stand if these great interests, the beneficiaries of the extensions and increase in our Navy, would cease their campaigning to bring about an enlarged and increased Navy?

Secretary DANIELS. I do not think that they control or dominate. I think the sentiment for what I would call an adequate Navy, which you may say is hard to define, I think that sentiment has not grown out of the work of interested men who sell ammunition to the Government and would like to sell more. All men who are in any business which sells to the Government would like to sell more. I do not think that that agitation of which you speak has had very much effect.

Mr. HENSLEY. You appreciate the fact that the press of the country—certain great newspapers, at any rate—never miss an opportunity to say something that they believe will bring about an increase?

Secretary DANIELS. I do not think many are influenced by those who sell munitions of war.

Mr. HENSLEY. We have an organization in the city of Washington known as the Navy League. Do you know anything about that?

Secretary DANIELS. I know something about it.

Mr. HENSLEY. They give banquets frequently?

Secretary DANIELS. I have attended one.

Mr. HENSLEY. They have sumptuous quarters in the Southern Building?

Secretary DANIELS. I have never been there.

Mr. HENSLEY. They have an organization and charge each member something like \$2 per annum?

Secretary DANIELS. I suppose they have some fee.

Mr. HENSLEY. They are making a continuous warfare, are they not, to increase the sentiment over the country in favor of a large Navy?

Secretary DANIELS. They are agitating and organizing in favor of an adequate Navy.

Mr. HENSLEY. Do you know the members of that organization, the officers of it?

Secretary DANIELS. I know some of them.

Mr. HENSLEY. Do you know Col. Thompson?

Secretary DANIELS. Yes.

Mr. HENSLEY. Do you know what his business is?

Secretary DANIELS. I do not know. He is not in any active business.

Mr. HENSLEY. At one time he was a metal man, in the nickel business?

Secretary DANIELS. I did not know what his business was. I know he was formerly in business. I thought he was rather in the stock business, cotton or something in that line.

Mr. HENSLEY. Do you know Mr. Satterlee?

Secretary DANIELS. Yes.

Mr. HENSLEY. Mr. Satterlee was formerly Assistant Secretary of the Navy?

Secretary DANIELS. Yes.

Mr. HENSLEY. He is a son-in-law of the late J. P. Morgan and a brother-in-law of the present J. P. Morgan?

Secretary DANIELS. I do not know his family relations.

Mr. HENSLEY. And to that extent connected with the banking house of Morgan, and they are interlocked with the United States Steel Trust. He is the attorney for this Navy League?

Secretary DANIELS. I did not know that.

Mr. HENSLEY. As you know, the young Morgan was the secretary and treasurer of that organization until recently?

Secretary DANIELS. No; I did not.

Mr. HENSLEY. I called the attention of Congress to the fact that these gentlemen were members of the organization during the last Congress when the bill was pending and who they were.

Secretary DANIELS. I knew you did that as to certain men.

Mr. HENSLEY. Do you know Mr. Horace Porter?

Secretary DANIELS. I met Gen. Porter at the Navy League banquet last spring.

Mr. HENSLEY. Do you know that he is connected with certain corporations?

Secretary DANIELS. I do not.

Mr. HENSLEY. You do not realize the fact that that institution is organized for the very purpose of disseminating sentiment in the country to bring about a large Navy?

Secretary DANIELS. Undoubtedly.

Mr. HENSLEY. They insist all the time that they are actuated wholly and solely from patriotic and noble purposes as against fellows like Judge Witherspoon and myself and others who have not the good of our country at heart.

Secretary DANIELS. I think the bulk of them are patriotic men who advocate a large Navy because they think that it is a safeguard to the Nation and that we should have it. I do not think that they doubt the patriotism of anybody else.

Mr. HENSLEY. These men are charging \$2 and sending out printed petitions into my district to the men in the mines, the machine shops, and along the railroads asking them to sign these blank petitions and then fire them back to me.

Secretary DANIELS. Do you not know that that is true of all sorts of legislation, the Red Cross, the good roads, and everything? Everything that comes before Congress, every policy that is proposed has its advocates, and they send out these printed petitions all about the country to the men in the mines and in the shops, and many thousands of them, if they never heard of this petition, believe in an adequate Navy.

Mr. HENSLEY. Certainly, and so do I; but when we have an adequate Navy?

Secretary DANIELS. You and I are together, but if you have an adequate Navy and you stand still you go backward, and you must go forward steadily.

Mr. HENSLEY. Are you aware of the fact that there are as many views concerning the size of the Navy as we have admirals in the service?

Secretary DANIELS. I know that there are varying views.

Mr. HENSLEY. These people who are making that character of campaign are the ones who are being materially benefited, the fellows who expect to get something direct out of it. That is what I complain of.

Secretary DANIELS. If they do, I complain of it as much as you do. I think that if they expect to get much out of it with the competitive bidding we have and the securing of lower prices and the fight against monopoly which the Navy Department is carrying on, they will be mistaken.

Mr. HENSLEY. Do you have competitive bidding between the great armor-plate fellows?

Secretary DANIELS. Not at all.

Mr. HENSLEY. Not in any particular?

Secretary DANIELS. No.

Mr. HENSLEY. The Powder Trust has had its way absolutely?

Secretary DANIELS. Very nearly so. I was going to bring that up later. In nearly everything we buy for the Navy—that is, the big items—the price has been fixed by monopoly. We have got to take steps to relieve the Navy Department from the controlled prices of the big interests.

Mr. HENSLEY. For instance, when our Government took a position in the Venezuela matter our Navy was not comparable in any particular with the British Navy?

Secretary DANIELS. The British Navy is larger than ours. It is on an island and it needs a larger navy than we need.

Mr. HENSLEY. It was not that our Navy would have been an match?

Secretary DANIELS. I would not say so, since they have more ships.

Mr. HENSLEY. But they adhered to the principle of the Monroe doctrine?

Secretary DANIELS. We did.

Mr. HENSLEY. We insisted upon it and they acquiesced in it?

Secretary DANIELS. Yes.

Mr. HENSLEY. I simply want information. I went back in all earnestness to my people after Congress adjourned and campaigned, and many times did I quote the statement made by Senator Aldrich with reference to the waste of the people's money. My people listened to it. I am in dead earnest, and I want to be able to go back to my people and explain to them clearly, so that they can read and understand it, that there is a difference in the administration of the department under Democrats, and that we are trying to relieve the burden that rests upon the people who are barely eking out an existence. I do not want to be offensive, but I am in dead earnest. Oftentimes I think that men with pistols in their hip pockets have an exaggerated idea with reference to the rights, based upon that fact, and it gets them into trouble.

I want to say that I believe it is the duty of you and of every administrative officer of this Government to earnestly assist in bringing about a condition of this kind which, I hope, will be as successful as Jefferson's administration was in bringing about the disarmament of the Great Lakes, and it is a condition that I am not only earnestly for and that I am fighting for, but that I am praying for.

Secretary DANIELS. I am entirely in accord with your earnest feeling that the administration ought to fight for economy. I would like to put into the record a statement showing what has been done along the line you suggest.

Mr. HENSLEY. That is what I want.

Secretary DANIELS. I was in office but a short time when I was troubled because of the fact that we had no competition whenever we came to buy the very costly things needed in the Navy. The last Congress authorized the building of battleship No. 39, and when we advertised for bids the three companies that make armor plate made an identical bid. I requested the representatives of the companies to come to Washington, and told them that the law required them to make affidavit that they were not in any combination or in any agreement to keep up the price, and I asked them if they were advertent of that law. They said they were, and that they had not had any conference before making their identical bids. I told them that I

was "from Missouri," and that when three companies, on contracts amounting to very large sums, made identical bids to a cent, that the burden of proof, to my mind, was on them to show that they had not either talked about it or that it was not a case of telepathy.

I canceled all the bids and refused to award any contract, and told them that we must have competition. Well, the matter went on. We found that going into this battleship there were certain things—like bolts, turbine rotor drums, steel plates, angle irons, and some iron and steel materials—which were made by smaller companies that could not make armor plate. So we advertised, divided the material that was to go into the battleship, and in that way we secured competition on everything except armor plate. By reason of that competition we bought the specially treated steel for battleship *No. 39* for \$378,261 less than we had paid for the specially treated steel for battleship *No. 34*.

Mr. BATHRICK. For one ship?

Secretary DANIELS. For one ship; yes. I will tell you how we secured that.

Mr. ROBERTS. What was the total amount of the contract?

Secretary DANIELS. I will get that; I do not know exactly. I find that it was 3,900 tons, at \$187.04 per ton, or a total of \$729,456.

Mr. ROBERTS. Was the contract a large one?

Secretary DANIELS. Yes. Had it been let at the price previously paid, it would have amounted to more than \$1,000,000.

Mr. ROBERTS. So that \$378,000 might be a large saving or a small saving in comparison with the total?

Secretary DANIELS. I will secure that. It was over 33½ per cent.

Mr. STEPHENS. Were the contracts practically alike?

Secretary DANIELS. The same material exactly.

You authorized the building of battleship *No. 39* in the New York Navy Yard. Before we began to build battleship *No. 39* we had the New York yard prepare estimates and prices on the plans and specifications for the Navy Department. They could not build it in the New York yard unless the total cost should come within the appropriation. They paid 12½ cents to the Carnegie Co. for the specially treated steel for battleship *No. 34*, and if they could not get some economies they could not build the battleship within the appropriation. So the New York Navy Yard put draftsmen on the work, and they asked the Carnegie people, not as a bid, to set a figure on this specially treated steel, and they set the same price as before. The Carbon Steel Co. set a figure of about 10 cents, I think. So in the estimate for building battleship *No. 39* at the New York Navy yard the Carbon Steel Co. bid on a 10-cent basis, which enabled them to come within the appropriation. There were no bids. The Carbon Steel Co. gave that information to the New York Navy Yard with the understanding that it would be confidential. When the bids came in the Carnegie people's figure was a fraction under 10 cents and the Carbon people gave the same figure that they gave in their estimate to the New York Navy Yard.

Mr. ROBERTS. You conveyed to my mind, at least, and I want to know if that is what you intended, an impression that in some way the Carbon Co.'s estimate had leaked out and that the Carnegie people had knowledge of it?

Secretary DANIELS. That is what they thought.

Mr. ROBERTS. That is the impression?

Secretary DANIELS. That was the impression the Carbon people had, and they came to me and they said: "Now, we bid the same price, the amount of the estimate, and the Carnegie people had ~~an~~ estimate in of 12½ cents, the same they had been charging before, and it seems to us that there must have been a leak; the Carnegie folks must have known our figures." Of course I had no evidence of ~~it~~, but all the New York authorities knew that unless they got the price down that they could not build, and, of course, I think it was generally known among the people in the New York yard. So I refused to accept any of those bids and advertised for bids again, whereupon the Carnegie people again bid their original price, 9½ cents, and the Carbon Co. came down lower still, and we gave them the contract.

Mr. ROBERTS. It may not have been a bad scheme to advertise again.

Secretary DANIELS. We saved on the battleship \$378,261 by that. Of course, the Carnegie Co. protested vigorously against readvertising.

Mr. BUCHANAN. Was that on the armor plate?

Secretary DANIELS. That was on the specially treated steel, which can be manufactured in smaller factories than are necessary for the armor plate.

Mr. ROBERTS. How many tons go into a battleship?

Secretary DANIELS. I will insert that—about 3,900 tons—so we saved that amount. The Carnegie Co. protested against the rebidding, and they asked me if I thought they had done anything wrong, and I told them that I had no evidence that they had done anything wrong; but when they made an estimate of 12½ cents to the navy yard and then came down to 10 cents, knowing that for the first time in years they had competition, it did look to me like there might have been telepathy.

We came to the matter of buying turbine rotor drums for battleship No. 39. We advertised for them separately, and we had, I think, three bids, one from an English concern and two from the Pennsylvania companies, I think, the Bethlehem and Midvale, but their bids were substantially alike—\$160,000 or about that. The English concern bid \$58,000, or \$102,000 less than either of them. We awarded the contract to the English concern, and saved on that battleship \$102,836 in that one item.

Mr. ROBERTS. The New York yard had figured on those rotor drums, and in making their figures to the department they had been guided by the prior price paid the American concern?

Secretary DANIELS. I do not recall about that; I will find out. They made their estimate on prices previously obtaining in America, and estimated that there would be a reduction in these estimates of \$123,000 if the rotor drums were purchased abroad.

Mr. ROBERTS. In other words, the lessening of the price of those articles was not any factor, so far as the navy yard was concerned?

Secretary DANIELS. We had enough money for that, even, I think, if we had paid the larger price. We come next to medium steel plates; and we saved \$19,000, because they could be made by the smaller companies.

Mr. ROBERTS. Where did that contract go—home or abroad?

Secretary DANIELS. In this country. On the angle iron and small iron and steel material we saved \$3,000.

Mr. ROBERTS. Please tell us where the contracts were let.

Secretary DANIELS. All those contracts were given to the companies in Pennsylvania, except for the turbine rotor drums. They can be made by factories that can not make armor plate, but can make smaller things. Under the bid on shaftings and forgings, we saved \$159,646 over the identical articles in the former ship, *No. 34*.

Mr. ROBERTS. That was done by rejecting the first bids and calling for second bids?

Secretary DANIELS. We advertised separately. As I understand it, generally there has been one advertisement for armor, bolts, screws, etc.

Mr. ROBERTS. What was the method you employed?

Secretary DANIELS. We advertised separately, and several of the small companies came in, and, of course, when they knew that those companies could come in, the Carnegie, Bethlehem, and Midvale companies came down in their prices.

Mr. ROBERTS. The small companies could not come in on the one bid

Secretary DANIELS. Not if we had included with armor these other things, because they can not make armor plate. On those items we saved \$662,743.

Mr. HENSLEY. Do you mean that this saving applies to one battleship?

Secretary DANIELS. Yes, sir. We saved it on battleship *No. 39* for the identical articles for which we paid that much more on battleship *No. 34*.

Mr. ROBERTS. Have you received the rotary drums from the English concern?

Secretary DANIELS. No, sir; not all of them. About half of them were delivered at the New York Navy Yard about a fortnight ago. We have the naval attaché in London inspect them.

Mr. ROBERTS. They will be thoroughly inspected before shipped?

Secretary DANIELS. They will be inspected before we take them.

When we came to the armor we rejected all the bids and were then absolutely in a situation from which it appeared there was no relief. Though you can not establish it in black and white, there is no doubt of an Armor Plate Trust all over the world. That is to say, the people abroad who make armor plate will not come here and submit bids, because they know if they do our manufacturers will go abroad and submit bids. They have divided the world, like all Gaul, into three parts.

Mr. HENSLEY. Was there not quite a contract given for armor plate just prior to your assumption of the duties of your office?

Secretary DANIELS. Not just prior, no; I think not.

Mr. HENSLEY. An item representing something like \$800,000, and in that connection I wish you would state what sort of a notice is given in the papers for competitive bidding.

Secretary DANIELS. I will find out.

Copy of advertisement for armor for *Pennsylvania*.

Sealed proposals for furnishing armor for naval vessels will be received at the Navy Department until 12 o'clock noon, Tuesday, February 18, 1913, when

they will be publicly opened. Forms of proposal and all information may be obtained from the Chief of Bureau of Ordnance, Navy Department, Washington, D. C.

N. C. TWINE,
Chief of Bureau of Ordnance.

JANUARY 25, 1918.

We came to armor plate, and, as I say, there is no doubt a world-wide understanding that the manufacturers will not bid against each other. We could not get any bids from abroad for armor plate, and after rejecting the bids I asked the gentlemen to come here. We had the other things contracted for, the ship was ordered, the New York Navy Yard was ready to go ahead, and we could not complete the ship without the armor plate. So I sent for the gentlemen representing those three companies and told them that we must have competition, and that if they would compete I would readvertise. They finally said that they would do so, provided, if one company of the three received the contract, it might sublet a part of it. In other words, they held us up.

Mr. ROBERTS. I would like to ask you a question on that point. Can any one of those three factories turn out the required amount of armor for a battleship within the time it will be needed on the ship?

Secretary DANIELS. I think any one of them by itself can. I would like to inform myself as to that.

There is required for battleship *No. 39* about 8,000 tons of armor.

The capacity of the Carnegie Steel Co.'s armor plant at Homestead is estimated at 10,000 tons per annum, that of the Bethlehem Steel Co.'s plant is the same, and the Midvale Steel Co.'s plant is 7,500 tons.

As the Midvale Steel Co. had undelivered at the time they bid for the armor of battleship *No. 39* about 2,700 tons of armor for the *Pennsylvania*, they would have had to deliver nearly 11,000 tons of armor, if they did not sublet part of the contract.

While the capacity of the Midvale Steel Co.'s armor plant is sufficient to have furnished this amount within the required time, it has been the experience of the Navy Department that on nearly every ship the completion has been delayed by the nondelivery of the armor owing to failures to meet ballistic tests and rejections of plates and parts of groups. The Midvale Steel Co. does not make any class B armor, and therefore it would have been necessary to have sublet the 250 tons of this class required.

Mr. ROBERTS. If that is the fact, it would not be unreasonable, then, for the lowest bidder who had contracted to furnish more armor than his plant could turn out to ask the privilege of subletting?

Secretary DANIELS. If that is so, that is correct, but, as a matter of fact, neither one of them wished the contract. I said to them, "If you get this low contract, do you not want it—do you not want this big business," and I urged them to make a bid and get it all. I said, "I will give this contract to the lowest bidder," but neither of them wanted it all.

Mr. BUCHANAN. Was that due to a gentleman's agreement?

Secretary DANIELS. I never call those things "gentleman's agreements."

Mr. BUCHANAN. I call it collusion.

Secretary DANIELS. That is the better word.

Mr. WITHERSPOON. Admiral Strauss gave the capacity of those three concerns, and I think he said 20,000 tons, if I remember correctly.

The CHAIRMAN. About 10,000 tons.

Secretary DANIELS. I did not want to permit subletting of a part of the contract, because I did not think we were going to get any real competition, but we had to build the ship, we were authorized to do so, and we had to go ahead. We advertised for bids, and the companies came down from the former price of \$454 a ton to \$440 a ton, and we saved on the armor plate \$119,374 on this ship. We gave it to the lowest bidder.

Mr. ROBERTS. Did the lowest bidder take the whole contract?

Secretary DANIELS. Yes; but he has the right to sublet.

Mr. ROBERTS. I understand. Do you limit the quantity that they can sublet?

Secretary DANIELS. No.

Mr. ROBERTS. They can sublet it all?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. My recollection is that Admiral Strauss stated that the Navy Department had found out that they could manufacture their own armor plate for \$187 a ton.

The CHAIRMAN. About \$280 a ton, varying in price according to the capacity and amount that was made.

Mr. WITHERSPOON. Mr. Secretary, in view of the fact that the Navy Department is advised that it could manufacture its own armor plate at such an immense saving, showing that there is so much graft and notwithstanding the reduction you have been able to secure, there is so much graft in this armor plate, do you not think that it would have been wise instead of contracting with them to wait, even if we had to wait 10 years, until we could get it at a fair cost rather than to submit to such a thing as that?

Secretary DANIELS. Well, I do not think so. I think that the wise course was to press them down \$119,000 and go ahead with the ship for which we had already made contracts for other things and which is needed, and to bring out all the facts and seek to get better prices in the future. I hardly think that I would have had the authority to hold up the building of the ship which is needed and to block the work in the New York Navy Yard.

Mr. WITHERSPOON. Would you be willing now to build two more battleships with the knowledge that those corporations could beat the Government out of that much money in armor plate alone rather than to wait until we can get it at a reasonable price?

Secretary DANIELS. I would say this: I hope that at the next bidding we can get them down, if we do not build any plant, but I think with the ships getting old and the necessity of keeping our Navy up to a high standard that we had better submit to it for one time than to stop.

Mr. BROWNING. It would take three years to build an armor plant?

Secretary DANIELS. I think we could build it in two years.

Mr. BRITTEN. You are strongly in favor of an armor plant owned and operated by the Government?

Secretary DANIELS. Yes. I think that if we had an armor plant equipped to make armor and after building it turned the key in the

door and locked it and threw the key away, the fact that we had it and could make the armor would bring the price down as in the case of other things.

Mr. HENSLEY. Do you not think that if we operated an armor-plate factory and also a powder factory, these sources of graft, the Navy League and a whole lot of organizations of that character, would go out of business?

Secretary DANIELS. If they are in business for the purpose of selling material to the Government.

Mr. WILLIAMS. You are so impressed with the necessity of continuing the naval program outlined that you feel it would be advisable to stand for this extortion until we can remedy it by the erection of a plant of our own?

Secretary DANIELS. I think that between the two alternatives we can not afford to stop building; I think that would be a fatal mistake.

Mr. WILLIAMS. I am for an adequate Navy. The only question in my mind is what constitutes an adequate Navy?

Secretary DANIELS. That is the only question.

Mr. WILLIAMS. What is your answer to that question? Do you believe now relatively at this time that we have an adequate Navy?

Secretary DANIELS. That is a hard thing to define. We should have modern ships to take the place of those becoming antiquated.

Mr. WILLIAMS. Have we, in your opinion, relatively at this time an adequate Navy?

Secretary DANIELS. I do not think so.

Mr. WILLIAMS. Have we to increase our Navy in proportion to the other navies in order that it may become adequate?

Secretary DANIELS. No; we do not need such a navy as England has.

Mr. WILLIAMS. If we continue the naval program outlined and retain our relative place among the navies of the world, would you regard that as adequate?

Secretary DANIELS. Well, no. I think this: I think we ought to try to secure uniform action to stop competition in building.

Mr. WILLIAMS. Do you think that a two-ship program will enable us to maintain our present place and will constitute an adequate Navy?

Secretary DANIELS. I do.

Mr. WILLIAMS. Do you think it will more than do it?

Secretary DANIELS. No; I think that is the minimum.

Mr. WILLIAMS. And you think that a one-ship program would not constitute in the future an adequate Navy?

Secretary DANIELS. Yes.

Mr. BUCHANAN. What advice do you get from the General Board? Through their advices do you come to the conclusion that the Navy is not adequate and that we must have two battleships?

Secretary DANIELS. They say we ought to have four battleships to keep up our strength relative to the other great nations and to allow for the replacement of the obsolete ships.

Mr. BUCHANAN. This naval board consists of men who have been or who are now naval officers?

Secretary DANIELS. Yes.

Mr. BUCHANAN. And they have given their whole life and study to this one question?

Secretary DANIELS. Yes.

Mr. BUCHANAN. And they have been so busy that they have not had time to consider other and broader things that the people themselves, for instance, have been considering?

Secretary DANIELS. This is true: Their business is the study of naval matters as experts, and it is their duty to give to the Secretary of the Navy, and for him to present to the committee, as I take it, what they think is necessary to keep the American Navy always ready for any emergency.

Mr. BUCHANAN. Does not that board consist of men who, as it is commonly known, associate rather in high life among the rich men of the country, whose influence might tend to influence them that certain things are right, when if they associated with the common masses they might be influenced in other ways?

Secretary DANIELS. I do not think they are influenced by anything in the world except their sense of duty and the needs of the Navy.

Mr. BUCHANAN. I believe in their honesty and sincerity, without question.

Secretary DANIELS. It is their business to present to the Navy Department their mature judgment, as naval officers and experts, what they think is the best thing for the country. Then it is my duty, after getting from them all the light I can on the administrative affairs and the policy of the country in this respect, to give your committee my judgment of their recommendations. They are doing their duty. In my report I have incorporated their full report to me. It is entitled to great consideration.

Mr. BUCHANAN. To further explain my position, I think they are surrounded with influences that are liable to make them do things and see things in a different light from a man who has been surrounded by the influences that I have, for instances.

Secretary DANIELS. Undoubtedly a man in the military profession looks at it chiefly from his professional education and belief.

Mr. BUCHANAN. You stated, as I understood, that you did not believe the great forces that are advocating large expenditures and a large Navy are in any way doing these things except from patriotic motives?

Secretary DANIELS. No; I said this: I said the—

Mr. BUCHANAN. Maybe I misunderstood you. I had reference, you understand, to the Navy League.

Secretary DANIELS. I said the great bulk of men in this Navy League are actuated by nothing but patriotic motives. There never was in the history of the world an organization into which there might not slip some man with an ulterior purpose. Demetrius did it in the case of the combine of the silversmiths of Ephesus. But such men play, upon the whole, an insignificant part. It is not long before their scheming is discovered and they are discredited.

Mr. BUCHANAN. It is a fact, is it not, that a great many men draw their convictions, in regard to matters in which they are interested, from the same source they do their profits, or that they take an interest in these matters in the same way that they do in their profits?

Secretary DANIELS. Undoubtedly.

Mr. BUCHANAN. Have you been informed that there was an investigation made in Europe which developed a collusion, I believe, with the Krupp Manufacturing Co. and other manufacturers there, where they even had ambassadors and newspapers who were advocating to each one of those nations that they continue to appropriate large amounts of money for the purpose of naval defense?

Secretary DANIELS. I have seen it so stated.

Mr. BUCHANAN. Have you any information? I have information that leads me to believe there is a collusion, and I would like to see it investigated.

Secretary DANIELS. You mean a collusion between the manufacturers?

Mr. BUCHANAN. There is a collusion in this country between the private corporations, and even with other countries, in my judgment—and I have some information which leads me to believe that—that is leading to the agitation of large expenditures and large appropriations for our naval defense, and that they are only patriotic for profits.

Secretary DANIELS. If you have any information of that character I think we ought to investigate it and throw light on it.

Mr. BUCHANAN. Have you any information in regard to what the organized labor people of the country are doing in the way of trying to prevent wars and in an effort to keep down war expenses?

Secretary DANIELS. I think they really are very earnest everywhere to prevent war, but at the same time the information I have is that they approve this program that I have recommended. I have had many letters and petitions from organized labor favoring this program.

Mr. BUCHANAN. I do not know about that, but the American Federation of Labor, in their convention, passed a resolution to approve of the naval holiday and in favor of peace, and the fact is that they claim in Europe they prevented what would have been one of the worst wars of the times, in regard to that Morocco controversy that came up, by conferring with each other and bringing about mass meetings to have those countries settle that controversy without resorting to war.

Secretary DANIELS. That is another good argument in favor of having the international conference seeking to prevent expensive building of navies.

Mr. BUCHANAN. My information is that the people of Germany and Great Britain are now endeavoring to restrain further large appropriations for naval purposes.

I believe that is all I desire to ask at this time, Mr. Chairman.

Mr. GRAY. I would like to inquire of the Secretary if he regards it an unsafe policy for this Nation to maintain a smaller Navy than other nations? Is that an unsafe policy?

Secretary DANIELS. I think it is an unsafe policy for us not to have an adequate Navy. I do not think an adequate Navy for us would be adequate for England, situated as she is. I do not think we need to try to keep up with a country like England.

Mr. GRAY. What is our rank in the naval world? I ought to know that without asking you, but I do not.

Secretary DANIELS. It is always a little uncertain; you can never be absolutely sure. England is first, I think; Germany second; and, I think, we are third.

Mr. GRAY. Is our policy at the present time to rank first or to maintain a statu quo as to a Navy?

Secretary DANIELS. To maintain a statu quo or a little—

Mr. GRAY (interposing). If you deem it a safer policy to maintain a smaller Navy than other Nations, are we unsafe to have Great Britain maintain a larger Navy? Are we not in an unsafe condition as against Great Britain on that same principle?

Secretary DANIELS. I do not think so, because I think Great Britain has so many more needs for a navy. It has many colonies. It can not afford to send its greatest dreadnoughts from home. It keeps its navy in the North Sea and near about.

Mr. GRAY. Germany has a larger navy than we have?

Secretary DANIELS. I think so.

Mr. GRAY. Are we unsafe with respect to Germany?

Secretary DANIELS. It would depend. If you could have all of the German battleships here, and all of ours here, and they had the most battleships, we would be unsafe, of course. It would depend upon the number and efficiency. You see, if we should have trouble with Germany, Germany could not afford to take its fleet out of the North Sea to come over, and could not send as large a fleet as it has.

Mr. GRAY. England and Germany are ranked as the stronger nations of the world all the way around, are they not?

Secretary DANIELS. Certainly so, as to the possession of battleships.

Mr. GRAY. If it is a safe policy to maintain a smaller navy as against a large, strong nation, why is it necessary to maintain a large navy as against a small nation—I mean if that principle is to be followed. We are safe from England and from Germany, and they are the larger nations. We are safe, I understand, and our policy is not to make our Navy supreme over them, but to remain in statu quo.

Secretary DANIELS. I have not said we were safe from them if they had a larger navy and should come into a fight with us. I have said the conditions are such that require much of their navy to be kept in their own waters, and therefore, having no near navy that will give us trouble, we do not ordinarily need as large a navy as they do.

Mr. GRAY. May I ask another question without being impertinent? I do not intend to be so.

Secretary DANIELS. I understand that.

Mr. GRAY. I am trying to get at what this policy of yours is.

The CHAIRMAN. In other words, Mr. Secretary, you do not want a larger hiatus than we have now?

Secretary DANIELS. No; I do not want to change the status. Unless we go forward with two battleships—and our other battleships are wearing out—we get in a place where if we were to be troubled we would not be certain of winning or of having an equal chance.

Mr. GRAY. You think it is necessary to have a larger navy than these smaller nations, do you?

Secretary DANIELS. I think it would be a fatal policy for us to retrograde in the strength of our Navy, and the only way to keep from retrograding is to build modern ships, not numerous, but to be ready.

Mr. HENSLEY. Let me ask a question on a particular line that has not been touched yet. Suppose we appropriate \$146,000,000 for the Navy this year, and that we are to continue a program that will call for approximately \$150,000,000 a year in order to carry out the naval program. Could that money be better expended and a better and more uniform system adopted and pursued if the money were appropriated in a lump sum to the department, to be expended or to be appropriated in the manner heretofore and now contemplated, this committee and the House making specific appropriations? I would like to have your opinion on that thought.

Secretary DANIELS. You mean if you appropriated \$100,000,000 in a lump sum, as they do in England?

Mr. HENSLEY. Yes.

Secretary DANIELS. For the Navy Department to spend as they choose, and make reports, without Congress authorizing specific things?

Mr. HENSLEY. Yes.

Secretary DANIELS. Of course it would depend. You would there trust to the wisdom of one man rather than the joint wisdom of the Secretary and Congress. If he were a very wise man I think it would be better to have the whole \$150,000,000 in a lump sum to be expended in his discretion, but he might be an unwise man and spend it not as wisely as under the direction of Congress.

Mr. HENSLEY. If it were appropriated to the department it would be expended under the direction of the Secretary of the Navy?

Secretary DANIELS. Yes.

Mr. HENSLEY. An advisory board could be provided by the law?

Secretary DANIELS. Yes.

Mr. HENSLEY. Could not the money be expended to better advantage and a permanent established policy pursued through more successful combination than by the haphazard and indiscriminate method of making appropriations now?

Secretary DANIELS. I do not think at present they are haphazard. I think that they are appropriated after much discussion and consideration. I think it would be well if some appropriations were general; but, taking the question of building battleships and taking the question of other things into consideration—

Mr. HENSLEY (interposing). To make myself clear, we have found some very foolish expenditures by reason of political influence, I assume. We found a coaling station at Frenchmans Bay and another at New London that seemed to be useless. There seems to be a yard down at Charleston which is idle; and here and there and elsewhere large expenditures of money appear to have been brought about largely by political influence to further the interests of some man or some party. That is the result of the manner in which we have been making appropriations heretofore.

The CHAIRMAN. May I call your attention to the fact that the establishment of a coaling station at Frenchmans Bay and at New London was by the department and not by specific act of Congress. That is a lump-sum appropriation.

Mr. GRAY. I am glad you make the suggestion, Mr. Chairman, because I was not advised of the fact. I simply had reached the conclusion it was a foolish expenditure.

The CHAIRMAN. That is the reason we repealed last year that provision of law that gave those lump sums.

Mr. GRAY. Having illustrated the thought in my mind, do you not believe, Mr. Secretary, that if you adopted this safe plan it would result eventually in a better Navy establishment and system than we now have?

Secretary DANIELS. I think undoubtedly if you had a permanent able board, you might have a policy that would be more consistent for a number of years; but in our Government, I do not think that would be possible and I think you would lose as much by a permanent board's mistakes as you would by congressional mistakes. I think either one would make some mistakes, but I do not think the change would be beneficial.

In other words, I am so new in office and know so little about many thing connected with naval expenditures that I would feel that my judgment, and the judgment of men on a permanent board, would not result as well as it is to thrash the whole thing out with recommendations of the department and then the committees of Congress.

Mr. GRAY. I am not advocating it. I wanted your opinion of it.

Secretary DANIELS. There are some advantages and some disadvantages.

Mr. ROBERTS. Mr. Secretary, a moment ago you stated in your opinion that we were safe from attack by England or Germany because of conditions existing in the vicinity of those nations. I want to ask you, Mr. Secretary, if your opinion is not based on the existing conditions in those countries, the conditions of the moment?

Secretary DANIELS. Certainly.

Mr. ROBERTS. Having in view the almost kaleidoscopic combinations of European nations during the recent Balkan War, is it not conceivable that there might be such combinations take place in Europe that would free any one of those nations from home entanglements and allow them to go anywhere in the world to force a war?

Secretary DANIELS. Certainly.

Mr. ROBERTS. I want to ask you further, Mr. Secretary, if you have any information with regard to what has been stated repeatedly in the press in the last three or four years as the offensive and defensive alliance between Japan and England?

Secretary DANIELS. Not officially, no; I know no more than what I see in the papers.

Mr. ROBERTS. Do you know whether or not there is a general understanding in the diplomatic world, without official knowledge, that there is such an alliance that has grown up since the Russian-Japanese War?

Secretary DANIELS. Nothing, except what I see in the press.

The CHAIRMAN. The text of that was published in the press. It was a newspaper report, but there was a revision made of that treaty in the past two years.

Mr. ROBERTS. So the conditions of the present moment would hardly be a safe basis for this or any other country to base its naval or military policy on?

Secretary DANIELS. I do not think so, and I think it would be fatal for us to presume there would be no change in present conditions, and that therefore we must go forward.

Mr. ROBERTS. You spoke, Mr. Secretary, of a report of a general board which you have incorporated in your report. That report recommends four battleships, and after considering the finances of the country and all the other elements of depression you recommend to Congress two battleships.

Secretary DANIELS. Yes.

Mr. ROBERTS. I want to ask if you would object if Congress, after viewing the question from all angles, should build four battleships.

Secretary DANIELS. Of course not. But I think that we ought to urge and try to secure international agreements.

Mr. ROBERTS. I agree with you fully, Mr. Secretary.

Secretary DANIELS. Therefore, I would say that in order to secure it, it is best not to say that "we want it, but still in ship construction we are going to surpass you." In other words, we should go forward moderately, showing we are not ourselves going into any excess, or going to the extent of what our most forward men say, but we are keeping our Navy in good shape, and asking them also to do the same thing—to stop excessive building.

Mr. ROBERTS. We do not want to go backward pending these prospective international agreements.

Secretary DANIELS. No.

Mr. BRITTEN. Mr. Secretary, let me inquire if you conferred at any time with the President about this matter?

Secretary DANIELS. Before I made my recommendations I conferred with the President about it, and made my recommendations after a conference with him and had his approval on the building program.

Mr. BRITTEN. The President is in favor of the two-battleship program?

Secretary DANIELS. He approved these recommendations; yes.

The CHAIRMAN. Proceed, Mr. Secretary.

Secretary DANIELS. I had not finished the matter of battleship 39.

Mr. HENSLEY. I want to ask one or two more questions before we proceed further, Mr. Chairman.

The CHAIRMAN. Very well.

Mr. HENSLEY. These complications, Mr. Secretary, which you say might arise, that would occasion war between this country and these other countries, are merely possibilities, are they not?

Secretary DANIELS. Nobody knows.

Mr. HENSLEY. Of course, we can not see into the future.

Secretary DANIELS. My opinion about it, of course, is not worth any more than the committee's.

Mr. HENSLEY. Our trade relations and all that are all friendly?

Secretary DANIELS. All friendly, and I do not look for war.

Mr. HENSLEY. Could a war be fought between this country and any of these great powers without the winner or victorious country being the loser in the end?

Secretary DANIELS. What do you mean by "loser"?

Mr. HENSLEY. Absolutely the loser in the deal. Not desirable, making it clear to any mind that it is not desirable.

Secretary DANIELS. If you are in a war, it is desirable to win, always.

Mr. HENSLEY. That is true.

Secretary DANIELS. Of course, you lose a lot of money, but if you are going into a war, you want to be prepared for war.

Mr. HENSLEY. That is true.

Secretary DANIELS. You do not want to go into a war, and my policy is as your's is, and that of us all, to try to avert it.

Mr. HENSLEY. Do you think there is one chance in a thousand for us to have war with Great Britain or Germany?

Secretary DANIELS. I do not look for one with Great Britain or any other country.

Mr. HENSLEY. You see right north of us thousands of British citizens living on one side of the line and thousands of American citizens on the other side of the line, dwelling in peace and harmony?

Secretary DANIELS. I think it is improbable, and yet we have had two wars with Great Britain.

Mr. HENSLEY. And when we were not in a state of preparedness that we are now, and we were victorious in each of those two instances.

The CHAIRMAN. And if we had been prepared in 1812 we would not have had any war.

Mr. BRITTEN. Do you think it a good idea for a young man, being brought up in life, to take up athletics without developing his brain and brawn as he grows older? I want to bring out a point raised by **Mr. Hensley.** The idea is that if we are prepared for war, we sort of invite it, and we go looking for war. I maintain that being unprepared offers a greater prospect for war than being thoroughly prepared. The mere fact a young man is athletic does not mean at all that he is looking for a fight.

Secretary DANIELS. I think the country ought always to be prepared and always try to keep from fighting.

Mr. HENSLEY. Does not the same principle apply to individuals?

Secretary DANIELS. No man ought to fight if he can honorably avoid it.

The CHAIRMAN. I think these theoretical questions have been discussed sufficiently, gentlemen. Let us proceed.

Proceed with your statement, please, **Mr. Secretary.**

Secretary DANIELS. We were discussing the matter you raised just now about economy and the fact that whenever we go to buy anything that costs a great deal of money we practically have no competition and the Government is held up in the matter of prices. We had to buy in the last week or two some armor-piercing shells. The prices seemed to me to be extortionate, so we secured very large competition—competition from Germany, competition from England, and competition at home. As a result of securing this competition, we made a saving of \$1,068,750.

Mr. ROBERTS. On a total of how much?

Secretary DANIELS. On a total, I think, of about \$3,000,000.

The CHAIRMAN. Will you put in the record, Mr. Secretary, a statement of the former prices paid and the prices accepted in the present contract for the several items which you have mentioned?

Secretary DANIELS. Yes; I will do that.

Lowest bids on projectiles, opened January 7, 1914, compared with prices in contracts of November, 1912.

Projectile.	Lowest 1912 prices.				
	Number.	Each.	Total.	Plus 20 per cent.	
				Number.	Total.
14-inch A. P.	3,500	\$490.00	\$1,715,000	4,200	\$2,038,000
12-inch A. P.	1,500	274.75	412,125	1,800	494,550
5-inch common.	20,000	13.30	266,000	24,000	319,200
4-inch common.	10,000	9.52	95,200	12,000	114,240
Total.....			2,488,325		2,965,990

Projectile.	Lowest 1914 bids on number required.				
	Number.	Each.	Total.	Plus 20 per cent.	
				Number.	Total.
14-inch A. P.	1,000	\$315.00	\$315,000	1,200	\$378,000
	2,000	320.00	640,000	2,400	768,000
	500	334.00	167,000	600	200,400
12-inch A. P.	3,500		1,122,000	4,200	1,346,400
	1,500	165.00	247,500	1,800	297,000
	5,000	8.56	42,800	6,000	51,360
5-inch common.	15,000	8.72	130,800	18,000	156,960
4-inch common.	10,000	5.46	54,600	12,000	65,520
Total.....			1,597,700		1,917,240

Decrease.

	Cost, 1912.	Bids, 1914.	Decrease.
On number advertised.....	\$2,408,325	\$1,597,700	\$890,625
On 20 per cent additional.....	2,985,990	1,917,240	1,068,750

Mr. ROBERTS. May I ask on this point, Mr. Secretary, if the bids which you received at home and abroad were from trust sources, so to speak—concerns that are supposed to be in trust—or are they what we call independent people?

Secretary DANIELS. Of course, as to those from abroad I do not know anything, except that one of the representatives of a foreign company was the agent of Krupp, although the bid did not come in Krupp's name.

Mr. ROBERTS. I was leading up to another question. I understood you to say a while ago there was a world-wide trust?

Secretary DANIELS. In armor plates.

Mr. ROBERTS. Have you any reason to suspect a world-wide trust in other steel manufactures?

Secretary DANIELS. In the matter of projectiles there seems not to be, because we stopped this competition. If there had been, we would not have gotten this competition.

Mr. FARR. There was some competition at home?

Secretary DANIELS. Some competition at home, too. Practically all of these orders were given to the same concerns that sold to us at the last time, and they brought their prices down.

Mr. ROBERTS. You mean at home?

Secretary DANIELS. All these orders were placed at home.

Mr. ROBERTS. With the same people with whom you have placed orders heretofore?

Secretary DANIELS. Practically; nearly all of them the same people.

Mr. ROBERTS. Do you think it is a good policy to purchase munitions of war abroad?

Secretary DANIELS. We have not purchased any.

Mr. ROBERTS. You made a contract for some, did you not?

Secretary DANIELS. I made a contract for some turbine rotor drums.

Mr. ROBERTS. Have you not bought some shells abroad?

Secretary DANIELS. We have not bought any since I have been in office, but last year and generally they have every once in a while bought some shells abroad; and I think that is a good thing to do, because you can not get their methods and their plans and their improvements otherwise; and now and then I think it is a good plan to buy a few over there to get a line on what they have done, also by way of being able to contrast American with foreign made shells.

Mr. ROBERTS. You would not believe in the policy of placing the bulk or large per cent of our orders for munitions of war abroad, would you?

Secretary DANIELS. There are some munitions of war you could not buy abroad at all, because you would have to give so many of our plans. Only such things as you could place that did not disclose what ought not be disclosed, and only then that for which our own concerns, by the proofs, were charging us exorbitant prices, except for experiment or contrast purposes.

Mr. ROBERTS. I understand the reasons for the particular action now, but you would not believe in the policy of going abroad for our war material?

Secretary DANIELS. Only in very exceptional instances.

Mr. ROBERTS. Because placing our contracts abroad might put us in a position where we could not get delivery. In case of war abroad that did not affect us in any way, it might affect the delivery of those materials to us?

Secretary DANIELS. Some things we could not buy abroad at all.

Mr. ROBERTS. As I understand your policy in inviting bids from abroad, it is simply to assure competition here?

Secretary DANIELS. Yes; partially.

The CHAIRMAN. And with reference to these projectiles, it was for experimental and test purposes?

Secretary DANIELS. Yes.

Mr. ROBERTS. I understand that, but the main purpose in inviting bids from abroad was to bring down the price at home. Could you conceive of a foreigner being just as cute as you in many ways, and

making an impossibly low bid—a bid at which he would not take the contract, but simply to hurt his rival here?

Secretary DANIELS. Of course, we are in this situation: If he does that, we have our inspectors and we buy——

Mr. ROBERTS (interposing). What guaranty have you that the foreigner would assume the contract if you awarded it to him?

Secretary DANIELS. One concern was Hadfields Steel Foundry Co. (Ltd.), Hecla Works, Sheffield, England, of large financial resources.

Mr. ROBERTS. Suppose he had refused you, could you get any remedy? How would this Government have any remedy? He is beyond your jurisdiction. All you could do in retaliation would be to shut him out of any future competition if he refuses to take the contract, being the lowest bidder.

Secretary DANIELS. I did not look into that. I knew he was a very reputable man.

Mr. ROBERTS. I am not criticizing the method, Mr. Secretary, but it occurs to me that perhaps the method may not be absolutely fair to the American manufacturer in every instance.

Secretary DANIELS. Undoubtedly they would not have come down on those shells for us if they could not make both ends meet and make money on it.

Mr. ROBERTS. I would not agree wholly with that, Mr. Secretary. I have known large concerns to take work at less than cost in order to keep their establishments going and tide them over a period of hard times or a period when they had no orders; otherwise their organization would be dispersed.

Secretary DANIELS. That is very exceptional, though. Very exceptional.

The CHAIRMAN. Proceed with your statement, Mr. Secretary.

Secretary DANIELS. With your permission, I will add in the record the other economies.

Partial list of economies in administration, Navy Department, from Mar. 4 to Oct. 16, 1913.

Saving in purchase of smokeless powder.....	\$168,000
Balance withheld for various purposes, Bureau of Yards and Docks, returned to Treasury.....	105,000
Saving, <i>Kanawha</i> and <i>Maumee</i>	70,200
Saving, freight, <i>Kanawha</i> and <i>Maumee</i>	25,000
Saving, equipment Darien radio station.....	100,000
Saving in cost of electric lamps, vessels.....	6,600
Saving in cost manufacturing gasoline engines.....	6,000
Saving in internal feed pipes (modified design).....	18,620
Total	488,420

Saving in Yards and Docks.

Central administration building, Portsmouth, N. H.....	\$20,000.00
Marine barracks and officers' quarters, Boston, Mass.....	148,000.00
Landing facilities, Newport, R. I.....	40,000.00
Marine Corps barracks (fireproof), Philadelphia, Pa.....	20,000.00
Radio station, Guantanamo, Cuba.....	9,890.00
Marine barracks and quarters, Canal Zone.....	400,000.00
Pattern shop, Puget Sound, Wash.....	33,839.88
Total.....	671,819.88

In addition to the above, the estimates submitted to Congress this year have been reduced in the department by over \$28,000,000.

Summarized statement of money saved the Government since Mar. 4, 1913.

On special-treatment steel for new battleship 39-----	\$378, 261	
On turbine rotor drums for battleship 39-----	102, 836	
On medium-steel plates for battleship 39-----	19, 000	
On angle irons and small iron and steel material for battleship 39-----	3, 000	
On forgings and shaftings for battleship 39-----	159, 646	
		\$662, 743
On class A armor for battleship 39-----	95, 746	
On turret armor for battleship 39-----	12, 600	
On class B armor for battleship 39-----	3, 528	
On bolts for battleship 39-----	7, 500	
		119, 374
Total-----		782, 117

These figures are based on the difference between prices paid for certain materials this year as compared with previous prices for the same material, the saving having been effected by getting real competition from firms not connected with the so-called iron and steel combination. In some cases these new firms have been the successful bidders and in others the knowledge that they were competing has caused the firms in the combination to cut rates over the prices they made themselves in previous years.

In addition to these savings, over \$30,000 has been saved by securing cheaper transportation for sand, coal, and iron material to stations in the Pacific. Numerous small savings, such as a saving of \$12,000 in the purchase of rope, which altogether make a large aggregate, have also been accomplished, but which can not be accurately figured until the close of the fiscal year.

We come to the matter of the armor-plate factory. I believe, in view of the fact that we have saved money in making powder and torpedoes, that we ought to enlarge our works so as to make the munitions of war cheaper, and that we ought to increase the gun factory and the powder factory, and have an armor-plate factory.

In the matter of powder, the price has gone down from 85 cents to 53 cents. This has been due to the fact that we were making part of the powder. We make the powder for twenty-nine and a fraction cents net. That is to say, it costs us that much for shop costs. Overhead charges would be 8 cents more, which makes about 38 cents, and we pay 53 cents for it.

The CHAIRMAN. Admiral Strauss stated the price as 40½ cents, but did not include a small cost of what was designated as Navy Department costs.

Mr. HENSLEY. Pardon me, Mr. Chairman. I understood him to say that included not only overhead charges, but it also included interest on the total investment of 3 per cent?

Secretary DANIELS. Yes.

The CHAIRMAN. It included interest charges, but did not include what he called Navy Department charges.

Mr. HENSLEY. I think that question was asked and I think he said, "Yes; that includes all those items."

The CHAIRMAN. No; it did not include that item.

Mr. ROBERTS. May I ask, Mr. Secretary, a question right here with reference to the manufacture of guns and armor plate and powder, to get your view whether or not you believe the Government should make all its guns, all its armor plate, and all its powder?

Secretary DANIELS. I believe we ought to be able to do it ultimately:

Mr. ROBERTS. Do you think, Mr. Secretary, it would be a wise policy to do that if it means the closing up of all private plants engaged in that particular work?

Secretary DANIELS. I believe in having the plants prepared to do it, and then I would say to these people, "We are going to buy so much powder or armor or so many guns. What will you bid?" If they gave a reasonable price, I would buy of them. If not, I would have the Government manufacture. I want the Government to get a fair price. We have not had it.

I invite attention to the policy of the British Government in this respect, as shown in the recent statement by the First Lord of the Admiralty, and you will see how closely their policy and our own agree:

We already keep our great system of the dockyards in full activity in order to provide a check on private constructors, and I see no reason, nor do my advisors, why we should shrink from making this further extension of the vast and various businesses of the admiralty.

Mr. ROBERTS. I do not think we have had testimony as to the relative cost of manufacture of guns, and the testimony so far as to the relative cost of armor plate is speculative purely. But we did have testimony as to the relative cost of making powder.

Secretary DANIELS. And torpedoes?

Mr. ROBERTS. Yes.

The CHAIRMAN. I will state that Admiral Strauss stated, as will appear in his statement, the relative cost of the guns at the gun factory here at the arsenal in the War Department, and also at the private gun concerns.

Mr. ROBERTS. Before I complete my question, may I ask what the relative cost of making guns is in the Government factories, both Army and Navy, and the private factories? Does not the Government manufacture also?

The CHAIRMAN. Yes. The Navy price was the lowest; the Army price was next; the private price was the highest.

Secretary DANIELS. I have the figures here.

Mr. ROBERTS. I am not interested, for the purpose of my question, in the absolute prices.

Secretary DANIELS. Let me give them now so as to get them in the record.

It costs us something less than \$60,000 to build a 14-inch gun. The Army is making 10 for us at a cost of about \$61,000 apiece. We asked for bids on those 10 guns and the Midvale and Bethlehem companies bid \$79,000 apiece for them, a difference as against the Army price of approximately \$18,000. And as against the Navy price of \$19,000. We can not tell so well about guns, because we were the first people that manufactured these guns.

The CHAIRMAN. In that connection I will state that Admiral Strauss stated that there were, in the Navy price, not included some charges which were included in the Army price in the way of what was known as departmental charges.

Mr. ROBERTS. What I am arriving at is this: If the Government were equipped to manufacture all its guns and they could be made cheaper than the private concerns make them, and if we were

equipped to make all our powder and we could manufacture it cheaper than the private concerns, and we were equipped to manufacture all our armor plate and could make that cheaper than the private concerns, can you conceive of any administration giving contracts to private concerns under those conditions? What excuse would there be for doing it if we could make these articles cheaper?

Secretary DANIELS. I would not do it if we could make them cheaper.

Mr. ROBERTS. If we are equipped to manufacture all these munitions of war, we are then going to close up the private concerns unless they have customers from abroad to keep them going. That follows, does it not?

Secretary DANIELS. Not absolutely. Suppose we are going to make this powder at a price that would cause them to reduce their price. If they say, "We are going to make this powder at a price that will give us a reasonable profit," it might be wise to give them some contracts.

Mr. ROBERTS. You are now coming around to what I am driving at, which is that in my judgment it would not be the part of wisdom for this Government to close up all these concerns that are engaged in the private manufacture of munitions of war, and do it all in Government plants, because in a number of instances we might not be able, and would not be able, to count all these munitions that we need in such an emergency; and it would be a terrible handicap to get these plants started and then have a deficiency in our own plants.

Secretary DANIELS. If you had the plants you could have on hand a quantity of supplies. I do not apprehend that very soon we are going to make it all, but the point I think that is essential is that we should be able to do it and then we should be able to fix the prices and buy at fair prices.

Mr. ROBERTS. I wanted to get your views; thank you.

Mr. BUCHANAN. The fact that the amount you manufacture has to do with the cheapness—that is, you can manufacture a larger amount of powder at less cost per pound than you can smaller amounts?

Secretary DANIELS. Of course that is true.

Mr. BUCHANAN. That applies to other items, because overhead charges are about the same in a larger plant as in a smaller plant.

Mr. BROWNING. After an exhaustive examination before the Committee on Appropriations of the House, as to the manufacture of powder, I believe it was agreed that the private cost was 50 cents a pound, or possibly 49 cents, and Congress limited the price of powder to 53 cents a pound. Do you think that an exorbitant profit? That was a very exhaustive examination before the Committee on Appropriations on the fortifications bill a year ago.

Secretary DANIELS. But in all that matter we have demonstrated that we can make the powder and pay the overhead charges for 38 cents. Against the congressional investigation is the actual fact that we make it for 38 cents. I should choose the latter.

Mr. BROWNING. I think a good many things that do not enter into it in your case do enter into the making of powder in the case of the private concerns; for instance, the Government pays no taxes; they do not have to ascertain the amount of interest on their money; they pay no insurance; and there is no selling expense, and I do not think you add the containers or the freight. All of this powder has to be de-

livered and freighted all over the country, wherever you say it is to be delivered. All these things do not enter into your cost of a pound of powder.

Secretary DANIELS. When you investigate the matter, we have now nobody to make the powder except one concern, and the relations between the Government and that concern, in my judgment, have been altogether too intimate. They have swapped secrets, which was mutually helpful. Conditions have been very pleasant. The Du Pont Powder Trust has handled the matter to our entire satisfaction in everything except price. We have paid them in the last 10 years \$21,860,350. Their prices have ranged in those years from 70 cents down to 53 cents. We can make that for 38 cents, and yet we pay them 53 cents. I had a talk with the head of that company, a charming gentleman, and he said they had done very great things for the Navy, and had given us many advantages. But we paid very handsomely for them, and my theory is that as long as we have only one concern outside upon which we are dependent we do not get the prices we ought to get.

Mr. ROBERTS. You are speaking about knowing that it would be manufactured for 38 cents a pound. That is a matter of competition and figuring, is it not?

Secretary DANIELS. No; it is a matter of exact fact, ascertained. That puts in all the overhead charges.

Mr. ROBERTS. What you term in the Navy overhead charges, but it does not include items of expense that every commercial enterprise must figure in as part of its cost?

Secretary DANIELS. I think it does, Mr. Roberts. Our only consideration in buying powder for the Government is to buy the best and the cheapest powder. It is not the business of the Government to buy powder to keep somebody in business.

Mr. ROBERTS. That is a question in my mind, if it is not.

Secretary DANIELS. That is fundamental with me. If Mr. du Pont had to go out of the powder business by reason of our making powder, he has taken the risk and has already made millions of dollars from the trade of the Government.

Mr. BUTLER. But look at the number of people employed by du Pont who would be affected by his going out of business. In my district there would be from 1,800 to 2,000 men thrown out of employment.

Secretary DANIELS. I will tell you what would happen to those men. We would employ most of them on an eight-hour basis ourselves, when the Government would make this powder, and they would be in a better position than they are with private concerns.

Mr. BUTLER. You could not employ all of the du Pont men?

Secretary DANIELS. Then, Mr. du Pont would use them to make his other kinds of powder for commercial purposes.

We are talking about these prices and how they are held up by these trusts. The real thing is that the theory has prevailed that if we went into the manufacture of these things we would put somebody out of business. I do not think we ought to put anybody out of business nor put anybody in business. If I go to buy powder for the Government, it is my business to buy that powder at the cheapest price I can. Of course it must be guaranteed the best powder, and

if we have only one concern from which I can buy it, I can not do that.

Mr. BUTLER. But the Government fixes the prices?

Secretary DANIELS. When you say the Government fixed the price, they fixed it at 53 cents, when I could make it at 38 cents, and I know their price is wrong.

Mr. BUTLER. Probably you can not put into your charges for the powder certain expenses they are bound to have. du Pont can not make powder without paying heavy taxes.

Mr. FARR. The Government does not lose any money in making powder?

Secretary DANIELS. Not a cent.

Mr. ROBERTS. I do not want my position misunderstood in regard to private concerns. I am not at all concerned about keeping them in business for their benefit, but for the Government's benefit in time of stress. That is the only interest I have in keeping these private people going, in order that we may have them as an exceedingly valuable asset if we ever get into war.

Secretary DANIELS. As long as we have plenty of money we can buy it.

Mr. BUTLER. But if this plant were to be dismantled, we can not do it in a moment?

Secretary DANIELS. I do not want to do it in a moment. I have no idea that in anything like five years you would make all your powder, but you would do this: You say, "Here is my plant; I can make it for 38 cents. I am open to bids. What will you do, Mr. du Pont?" Mr. du Pont has a great concern and has done great things. He has employed the most expert inventors in the world and found many processes and given some of them to the Government. Of course the Government has given him some, and we have had a very pleasant association.

Mr. HENSLEY. He has prospered all these years?

Secretary DANIELS. Certainly he has, and he ought to prosper. We have brought down his powder from 85 cents to 53 cents. In May, 1903, it was 70 cents. It was 85 cents before that. We have bought from him \$21,000,000 worth of powder, and more.

I would not trust myself or any man to monopolize anything. If we have but one man who has what we need he will charge a pretty good profit for it, and the Government ought never to be at the mercy of any concern which is the only seller.

Mr. ROBERTS. It is a fair thing to state that, with reference to smokeless powder, prior to 1903, both the Government and the private concerns were just commencing to make it in this country, and the cost would have been correspondingly greater in the first instance.

Secretary DANIELS. Of course.

Mr. ROBERTS. Either to the Government or to the private concerns.

Secretary DANIELS. Of course, that is true.

Mr. ROBERTS. The prices that any private concern would ask for an article under those conditions of starting to manufacture and develop it would necessarily be greater than the prices they would ask for something after it was well established and they knew what they could do.

Secretary DANIELS. They can do it, but they do not.

Mr. BUTLER. I have in my hand here, and probably you have seen it, the "cost of powder," being extracts from a report of a subcommittee of the Committee on Appropriations for the fiscal year 1914. Have you examined and gone into the details of those hearings?

Secretary DANIELS. No.

Mr. BUTLER. I would like to have you do that; and if you can put it in this hearing, I would like to have you state what you think regarding the cost of powder as given at those hearings.

Secretary DANIELS. But here is my situation: I do not need to find out what those hearings did. I know what it costs. We are making it and I have the facts. If you had 10,000 hearings it would not affect the cost at which we make this powder.

Mr. BUTLER. I am getting at what it costs private concerns, so as to know whether they are charging us an exorbitant price for powder. If 53 cents in an exorbitant price, I want to know whether there is graft in it here.

Secretary DANIELS. I never charged graft.

Mr. BUTLER. I know you have not, and I did not mean that.

Secretary DANIELS. I do not charge that concern with anything that is not straight and honorable. I just charge them with charging us too much.

Mr. BUTLER. There are certain expenses that enter into a private concern's cost that the Government can not put in, and, of course, the Government can make it cheaper when they do not pay any tax, for instance.

Secretary DANIELS. I have not examined all those hearings, but a gentleman, who examined them very carefully, said to me that I would observe in all the hearings the Du Pont people never had stated what it cost them to make powder; that is, the actual shop price. They took our figures as to what we said it cost us per pound, but we paid higher wages and all that, and gave leave, and better conditions, and holidays. They took our figures, but they never gave any figures of their own as to the cost. I have been so informed by a gentleman who said he examined the record very carefully.

Mr. BUTLER. On page 1030 of the hearings to which I referred the actual cost to the manufacturer of a pound of powder is given as 33.619 as manufactured by them, while the Government price right under that in another table is given as 45.53. How do they arrive at that 45? The Government cost is 33.61, and interest at 5 per cent is 5.50. The Government did not pay anything in the way of taxes; they admitted that the Government did not do that and merely estimated that figure. They do not put in rejected powder, powder boxes, freight, or any taxes.

Secretary DANIELS. I have no idea these plants will go out of business altogether. I think they would give us a price that would be reasonable if we could make all our own powder. We would give them some contracts. We could to-morrow build more ships in the navy yard than we do, but when private companies bid and build them more reasonably we give out some contracts to them. We could do the same thing as to powder.

Mr. WILLIAMS. Du Pont does not depend on the Government for business to enable him to keep going?

Secretary DANIELS. Oh, no.

Mr. WILLIAMS. And to continue in business?

Secretary DANIELS. A great part of their business is commercial powder.

Mr. BUTLER. Nobody uses smokeless powder but the Navy?

Secretary DANIELS. He would gradually close or would do it at a lower price and transfer that business to several other lines, and we would take a lot of his good men and employ them for the Government.

Mr. FARR. Have these reductions in prices been competitive on the part of the company or enforced by Government investigations and conditions resulting therefrom?

Secretary DANIELS. I think this investigation by a congressional committee brought it down to 53 cents.

The CHAIRMAN. Part of them were voluntary—that is, by the action of the board that fixed the price—and part of them were by legislation.

Mr. FARR. That was the result of agitation?

The CHAIRMAN. Yes; and investigations.

Mr. BROWNING. The Government does not have to depend entirely upon Du Pont for powder, does it? Are there not three or four other concerns that manufacture powder?

Secretary DANIELS. I understand that there are three concerns on paper—one called the International, one called the California, and one the Laffin & Rand, but they all belong to Du Pont. That is what I understand. I may be mistaken about it.

Mr. BROWNING. I thought there were others than Du Pont. I find in the hearings of 1912, on page 608, a list of independent companies manufacturing dynamite and high explosives given by Col. Buckner—a list of 49 different companies; all independent companies.

The CHAIRMAN. They sell dynamite, etc., but do they sell smokeless powder?

Mr. BROWNING. I do not know about smokeless powder. A lot of these companies are independent.

The CHAIRMAN. Do any of those companies make smokeless powder?

Mr. BROWNING. I do not know myself.

There is only one question which I wish to ask the Secretary.

The CHAIRMAN. The Government and the du Pont people are the only ones which make smokeless powder.

~~Mr. BROWNING. I think that is true.~~

Is it not a fact, Mr. Secretary, that the Du Pont Co. has four factories where they manufacture powder only for the Government, practically four plants turned over to the Government?

Secretary DANIELS. I think that is true; I am not certain.

Mr. WILLIAMS. Mr. Secretary, the Government now has a plant for the manufacture of powder for the Army?

Secretary DANIELS. We have a plant for the manufacture of powder for the Navy.

Mr. WILLIAMS. Is there a separate plant for the manufacture of powder for the Army?

Secretary DANIELS. I think there is.

The CHAIRMAN. Yes, sir; at Picatinny. There was a hearing on that matter last year before the Appropriations Committee and also

during the present session in connection with the fortifications appropriation bill.

Mr. WILLIAMS. Does one plant supply powder to the other?

Secretary DANIELS. Yes, sir; we reciprocate.

The CHAIRMAN. They make it and sell it to each other.

Mr. ROBERTS. The smokeless powder plant of the Army only makes the small-arms smokeless powder. They do not make smokeless powder for the big guns.

(The statement referred to by Mr. Browning follows:)

List of competitive independent companies manufacturing and selling dynamite and high explosives during a part or the whole of the year 1910.

Name of company.	Business office.	Location of mills.
Aetna Powder Co.....	Tribune Building, Chicago, Ill.	Aetna, Ind., and Thebes, Ill.
Ajax Dynamite Works.....	Bay City, Mich.	Kawkawlin, Mich.
American Dynamite Co.....	Elyria, Ohio.	Near Amherst, Ohio.
American High Explosive Co. (Burton Powder Co.)	Pittsburgh, Pa.	Coverts, Pa.
W. H. Blumenstein Chemical Works	Pottsville, Pa.	Mount Carbon, Pa.
Cameron Powder Manufacturing Co.	Emporium, Pa.	Wyside, Pa.
Giant Powder Co., Consolidated	San Francisco, Cal.	Point Pinole, Cal. (black powder mill at Clipper Gap, Cal.)
Hancock Chemical Co.	Dollar Bay, Mich.	Near Dollar Bay, Mich.
Illinois Powder Manufacturing Co.	St. Louis, Mo.	Grafton, Ill.
Independent Powder Co. of Missouri	Joplin, Mo.	Near Carthage, Mo.
Jefferson Powder Co.	Birmingham, Ala.	Sayreton, Ala.
Keystone National Powder Co.	Emporium, Pa.	Emporium, Pa., and Stinsonahoning, Pa. (2 plants)
Masurite Explosive Co.	Masury, Ohio.	Masury, Ohio.
J. B. Miller Powder Co. (black powder and dynamite).	Sumneytown, Pa.	Near White Haven, Pa.
Monguagon Powder Co. (Dumbar & Sullivan).		Powder Island, in Detroit River, Mich.
Nitro Powder Co.	Kingston, N. Y.	Mingo Hollow, N. Y.
Pennsylvania Trojan Powder Co.	Allentown, Pa.	Guths Station, Pa.
Pluto Powder Co.	Easton, Pa.	Ishpeming, Mich.
Potts Powder Co.	New York City, N. Y.	Reynolds Station, Pa.
Puget Sound & Alaska Powder Co.	Seattle, Wash.	Mukilteo, Wash.
Texas Dynamite Co.	Beaumont, Tex.	Landry, Tex.
Trojan Powder Co.	San Francisco, Cal.	Roberts, Cal.
Waclark Titanite Explosive Co.	New York City, N. Y.	Corry, Pa.
West Penn Powder Co. (Geo. R. McAbee)	Pittsburgh, Pa.	Tunnelton, Pa.
American Powder Mills	Boston, Mass.	South Acton, Mass.
Austin Powder Co.	Cleveland, Ohio.	Falls Junction, Ohio.
Black Diamond Powder Co.	Mahanoy City, Pa.	Hauks Station, Pa.
Burton Powder Co.	Pittsburgh, Pa.	Quaker Falls, Pa.
Cressona Powder Co.	Pottsville, Pa.	Cressona, Pa.
Connell Powder Co.	Scranton, Pa.	Trevorton, Pa.
Egyptian Powder Co.	East Alton, Ill.	Marion, Ill.
Equitable Powder Manufacturing Co.	do	East Alton, Ill., and Fort Smith, Ark.
Excelsior Powder Manufacturing Co.	Kansas City, Mo.	Holmes Park, Mo.
Giant Powder Co., Consolidated (black powder and dynamite).	San Francisco, Cal.	Black powder plant at Clipper Gap, Cal.
Jefferson Powder Co. (black powder and dynamite).	Birmingham, Ala.	Sayreton, Ala.
King Powder Co.	Cincinnati, Ohio.	Kings Mills, Ohio.
Locust Mountain Powder & Dynamite Co.	Mahanoy City, Pa.	Krebs Station, Pa.
Miami Powder Co.	Chicago, Ill.	Goes, Ohio, and Thebes, Ill.
Nuremburg Powder Co.	Hazleton, Pa.	Nuremburg, Pa.
D. C. Rand Powder Co.	Pittsford, N. Y.	Pittsford, N. Y.
Rand Powder Co., of Tennessee	Knoxville, Tenn.	Dossett, Tenn.
Roberts Powder Co.	Shenandoah, Pa.	Krebs Station, Pa.
Rockdale Powder Co. (black powder and dynamite).	York, Pa.	Hoffmanville, Md.
Senior Powder Co.	Cincinnati, Ohio.	Morrow, Ohio.
Shamokin Powder Co.	Shamokin, Pa.	2 mills, Shamokin, Pa.
Standard Powder Co.	Pittsburgh, Pa.	Horrell Station, Pa.
United States Powder Co.	Terre Haute, Ind.	Coalmont, Ind.
Western Powder Manufacturing Co. (Buckeye).		Edwards Station, Ill.
Tennessee Powder Co.	Jellico, Tenn.	Jellico, Tenn.

¹ Waclark Titanite Explosive Co. were manufacturing only in a small way during 1910.

During the year 1911 the following companies above mentioned went out of business: Masurite Explosives Co. went into liquidation on account of poor business conditions. Rockdale Powder Co., failed. Texas Dynamite Co., plant abandoned; lack of business. D. C. Rand Powder Co. and Tennessee Powder Co. (mill inactive). (Have not been manufacturing since September, 1910.)

Mr. ROBERTS. Is it not a moral certainty in your mind that if the Government can make all it needs of any given article cheaper than that article can be purchased outside, that public sentiment would demand that the Government manufacture it all?

Secretary DANIELS. And I said, ultimately they will do it.

Mr. ROBERTS. Then the mere fact that the Government is able to manufacture and has the facilities at hand to do it, would unquestionably close up private plants that were manufacturing that same article and only had the Government for a customer?

Secretary DANIELS. Ultimately; yes. I think another reason why the Government should manufacture powder, guns, and munitions of war, is that if you buy powder or guns or armor plate from private concerns they sell the same things to any other nation, and if there is some process invented that is better for us, we ought to keep it.

Mr. ROBERTS. Right on that point, Mr. Secretary, let me get your views on this question: In the last Congress I introduced a bill providing a reward to civilian employees in the Navy Department for valuable suggestions in the course of a year that would tend to economy in production or increased efficiency, or new devices that would accomplish these purposes, and there was a limit of \$1,000 a month that would be paid by the department to employees for such suggestions. I want to know what your views are on such a bill as that?

Secretary DANIELS. You mean any invention; armament?

Mr. ROBERTS. Inventions in any line in connection with Navy manufacture methods.

Secretary DANIELS. They have that in the Army.

Mr. ROBERT. They have a bill similar to that. I do not know that the amounts paid are the same, but I think they are the same with reference to the general idea. I want to get your views, because I have it in mind to reintroduce that bill. I think myself it is a very valuable stimulus to men employed in our naval stations and navy yards, as it is to men employed in the technical end of our bureaus, to put their wits to work to save money for the Government or to invent new processes that will save money or at least put us ahead of other people in that line.

Secretary DANIELS. I think if you limit it to technical work and safeguarding property it would be a good stimulus.

Mr. WITHERSPOON. Mr. Secretary, about this powder, I want to get your view a little more clearly stated in one aspect than you have made it to my mind at this time. Mr. Browning has asked several times and called your attention to the fact that these private manufacturers of powder have to pay out money for a good many things that the Government does not have to pay for. For instance, taxes, insurance, and things of that kind. Assuming that that is the explanation of the great difference in the cost, you say you can make it for 38 cents and we are paying 53 cents. Suppose that that whole difference is caused by the items that he mentioned, is that any reason why we should continue to pay the 53 cents when we can make it for 38 cents?

Secretary DANIELS. I do not think, as Secretary of the Navy, I have any right to consider anything except getting the best powder and the cheapest.

Mr. WITHERSPOON. If you were to consider that any pay these private manufacturers 15 cents more a pound than you can make it for, and that on the ground that they have to pay taxes and insurance, would not that be the Government paying their taxes and insurance?

Secretary DANIELS. Certainly; that is absolutely correct.

The CHAIRMAN. I think perhaps the committee would like to arise now. Mr. Secretary, we will be glad to have you come back to-morrow morning at half past 10.

Mr. HENSLEY. Let me ask him two or three questions before we adjourn, Mr. Chairman?

The CHAIRMAN. Go ahead, Mr. Hensley.

Mr. BUCHANAN. Just one question. I asked a question which the Secretary did not answer, in regard to confining this amount of money that is paid for inventions to a certain department.

Secretary DANIELS. Do you mean the technical departments?

Mr. BUCHANAN. Yes.

Secretary DANIELS. If you have it done generally—for instance, like efficiency—it is too broad a term. I think the men in clerical or business lines might be paid for matters that are not inventions, but you open a broad door there.

Mr. ROBERTS. That is the very purpose, to open a broad door. Personally I would not like to see it confined to the mechanics and the workingmen, because, as you will realize, there are improvements going on all the time in office management, in filing devices, and all sorts of new ways in handling the office part of the business, which means a saving to a concern or to the Government. For instance, let me remind you of the loose-leaf ledger. Whoever suggested that made a fortune out of it, and it simplified and cheapened bookkeeping. I have noticed in some of the offices of the bureaus a new filing device—a half circle of wood with these metal sheets that can be adjusted so as to make a compartment to hold your papers, according to the number of papers that will go into it. That is a labor-saving device. There are lots of things that bright fellows can suggest if there is an inducement to them to do it. My idea is to have all these things passed on by some authority in the department, sifting out those that are of value, rejecting those that are of no value, and providing that no reward goes to the man suggesting the thing unless he releases the Government from future claims of royalty or anything of that sort. For that reason I do not like to see such a bill confined purely to the mechanical work, because there are a great many mental processes that must be gone through in administering the Navy Department that involve something outside of the mere mechanical part of it.

Mr. HENSLEY. As I gather from what you said to me in answer to some question, Mr. Secretary, I assume that it is your opinion that it is not an international rivalry so far as this Nation is concerned in the matter of ship building?

Secretary DANIELS. I do not think we can absolutely separate ourselves from what the other nations do. I do not think we ought to join a rivalry to equal England, for instance.

Mr. HENSLEY. The same interests in these other countries as well as this country are bringing the pressure to bear for development of that kind beyond doubt.

Secretary DANIELS. What do you mean by "the same interests"?

Mr. HENSLEY. The Krupp interests and the Steel Trust people and all those.

Secretary DANIELS. I do not think they have anything like the influence that you seem to think in this country. I do not speak of any other country.

Mr. HENSLEY. There is no question but what we, to a large extent, in arriving at a conclusion as to the size of our Navy, are governed by the movement of other countries.

Secretary DANIELS. To some extent we must take into consideration what they do.

Mr. HENSLEY. Mr. Secretary, for instance, if Great Britain this year would say they were not going to authorize the building of any battleships, do you not think that would have a very material effect upon this Nation?

Secretary DANIELS. I think it would upon all nations.

Mr. HENSLEY. And if Germany should lay down that policy and say, "For this year we are not going to authorize the building of any additional ships," that that would affect Great Britain and France and all other countries, and this country as well?

Secretary DANIELS. If we could get Great Britain and Germany and France to do it, it would have great effect. If one by itself were to do it, it might not have any effect at all.

Mr. HENSLEY. If one would do that, you say you do not think it would have any effect on the other nations?

Secretary DANIELS. Very little.

Mr. HENSLEY. I understood you to say a moment ago it would have a material effect if Great Britain said that.

Secretary DANIELS. It is such a big country, that anything Great Britain does has effect; but it might cause Germany, for instance, to say "Great Britain is reducing; let us go forward."

Mr. HENSLEY. It is more probable, is it not, Mr. Secretary, and more likely, that it would have just the opposite effect? Do you not think so?

Secretary DANIELS. It is liable to have the opposite effect upon other countries, but upon England's chief competitor it might not. That is a question that is so difficult to answer that I do not think it might be called a fair question.

Mr. HENSLEY. You can see what I am leading to?

Secretary DANIELS. Yes; I see that.

Mr. HENSLEY. Do you not believe if this great Nation were to say this year, and you, as the head of that great department were to say this year, "We do not need any additional battleships and we are not going to authorize any additional battleships for this year," that it would have a tremendous effect upon these nations?

Secretary DANIELS. I do not. If we are going to have our Navy, we have got to have a strong Navy. I do not think we ought to say to the people, let us stop all this business. That is extreme.

Mr. FARR. If Germany and England do conclude to build fewer ships this year, would that affect your view of the recommendations I have presented?

Secretary DANIELS. I think we ought to have this minimum program under any conditions this year.

Mr. FARR. Regardless of what England or Germany may have done?

Secretary DANIELS. This year, unless we should have an agreement. I think this is a moderate program, and that we should not fail to go thus far wisely.

Mr. HENSLEY. But we are mounting higher and higher every year.

Secretary DANIELS. Yes.

The CHAIRMAN. The fact that last year and year before last we only built one ship had no effect on the programs of the other countries?

Secretary DANIELS. Not at all.

The CHAIRMAN. We will adjourn at this time, gentlemen, until half-past 10 to-morrow morning.

(Thereupon, at 1.05 o'clock p. m., the committee arose and adjourned until to-morrow, Friday, January 30, 1914, at 10.30 o'clock a. m.)

THE COMMITTEE ON NAVAL AFFAIRS,
Friday, January 30, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE
NAVY—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us again this morning the Secretary of the Navy.

You may proceed, Mr. Secretary.

Secretary DANIELS. Yesterday morning Mr. Roberts asked what assurance we had that the rotor-drum forgings made abroad under this contract would be delivered and how we were protected.

Mr. ROBERTS. Yes.

Secretary DANIELS. The fact is that this contract is made with John Platt, of New York City, by the Navy Department.

Mr. ROBERTS. He is an American, resident in this country?

Secretary DANIELS. Yes. It provides for delivery within 180 days from the date of contract. The amount of the contract is \$57,436. The lowest bid we had for the drum forgings to be manufactured in America was about \$160,000. The contract provides for a payment of 75 per cent upon the completion and delivery of the forgings and the balance after machining has proceeded sufficiently for us to demonstrate that the forgings are in all respects satisfactory. The contractor is under bond to the extent of 25 per cent for the faithful performance of his contract. About one-half of these forgings were delivered at the New York Navy Yard two weeks ago and are now in the process of machining.

Mr. ROBERTS. The foreign contractor receives 75 per cent of the contract price when he delivers the rough forgings, if I understood you correctly?

Secretary DANIELS. Upon complete delivery.

Mr. ROBERTS. What do you mean by "complete delivery"—the rough forgings laid down at the New York yard?

Secretary DANIELS. I take it that is right.

Mr. ROBERTS. If the machining of the forgings demonstrates flaws or any defects that call for rejection of the castings and he is given 75 per cent of the contract price, with a bond of 25 per cent of the total contract, we might have great delay, might we not, in getting the rejected forgings replaced?

Secretary DANIELS. I think, with the bond of 25 per cent, there will be no difficulty about it.

Mr. ROBERTS. I am not speaking about the loss; I am speaking about the delay in furnishing the forgings.

Secretary DANIELS. I do not think there will be any danger about that.

Mr. ROBERTS. Many defects are shown in milling that can not be discovered on the inspection of the castings?

Secretary DANIELS. Yes; but the contractor does not get his money unless it all comes right.

Mr. ROBERTS. But he gets 75 per cent of it?

Mr. BRITTEN. He is bound for 50 per cent—25 per cent retained and his bond of 25 per cent in addition.

Secretary DANIELS. I think that makes the Government perfectly safe.

Another very important matter, and one that we have not been able to go into sufficiently before and to make exact recommendations about, is the matter of oil for our ships.

Mr. ROBERTS. Mr. Secretary, are you through with what we call the building program—the increase? You have spoken about battle-ships; do you intend to refer to it again?

Secretary DANIELS. That is the chief increase; there is no other increase of any moment.

Mr. ROBERTS. Mr. Chairman, I want, before the Secretary is through, to take up, in connection with the battleship increase, some questions about the other craft—the subsidiaries which have been recommended.

The CHAIRMAN. We can take up that question now.

Secretary DANIELS. We recommend eight destroyer and three submarines.

Mr. ROBERTS. As to the eight destroyers, what size and type of destroyer has the department in mind, and what is the cost of it?

Secretary DANIELS. The same size as last year.

Mr. ROBERTS. You are not contemplating a larger tonnage?

Secretary DANIELS. No; the same as last year.

Mr. ROBERTS. Oil burners?

Secretary DANIELS. Yes; oil burners.

Mr. ROBERTS. You are not contemplating any heavy oil burners—any internal-combustion engines?

Secretary DANIELS. No; this program is to continue the same plan.

Mr. ROBERTS. I gathered the impression from a statement of a former official in the department that the department is considering the advisability of replacing destroyers with submarines of a certain type and size, having certain qualifications, what might be termed a large, seagoing submarine, if one could be developed, that would have the surface speed and endurance of a torpedo craft, to go with

the fleet instead of the destroyers. Has that been brought to your attention?

Secretary DANIELS. There has been some discussion about that, but it is not intended in the main to depart from the old plan.

Mr. ROBERTS. Have you any views on that?

Secretary DANIELS. No; I have not studied that question enough to go at any length into details.

Mr. ROBERTS. You have recommended, if I recall, three submarines, one a large one?

Secretary DANIELS. One 1,200 tons and the tonnage of the other two 550.

Mr. ROBERTS. Has it been called to your attention in any way through any of your boards or officers the desirability or advisability of building in the future smaller submarines than the size of the two you have just mentioned and larger ones possibly than that mentioned in your report?

Secretary DANIELS. No.

Mr. ROBERTS. You do not know whether that is being considered?

Secretary DANIELS. The technical boards are always considering every possible change, but there has been no recommendation of that kind.

Mr. ROBERTS. Do you have any views yourself as to the desirability of going back, so to speak, to the size and tonnage of the submarine of two years ago with the idea of increasing the number with the sum total outlay, using this small type purely for the purpose of harbor and seacoast defense?

Secretary DANIELS. No.

Mr. ROBERTS. I have heard more or less discussion of that. Recognizing the value of the submarine itself for harbor and coast defense, I think there is a feeling among some of the officers that with the same amount of money we are appropriating we could get an additional number of boats of a smaller size that would have all the valuable qualities of any submarine for purely coast and harbor defense.

Secretary DANIELS. I have not gone into that.

Mr. ROBERTS. It might be a good thing for the department, through its technical boards, to give serious consideration to that, because the whole purpose of the department, the committee, and Congress in this matter of naval defense or naval preparation is to secure the best results with a given amount of money.

Secretary DANIELS. That is the point. In this recommendation I have followed the recommendations of the experts within the limits of a reasonable appropriation.

Mr. ROBERTS. I want to ask you a few questions about our submarines. We have what are called submarines G 1, 2, and 3. G 1 was authorized June 29, 1906. That is almost eight years ago. G 2 was authorized May 13, 1908, almost six years ago, and G 3 was authorized March 3, 1909, almost five years ago. Those were boats of the Lake type?

Secretary DANIELS. Yes.

Mr. ROBERTS. I want to ask you if the Lake Co. has delivered to the Government any of those boats?

Secretary DANIELS. Pretty soon after I came into office the Lake Co. sent their representative to Washington and he said that they were in financial trouble; that they had not been able to promptly

deliver the boats according to their contracts. It is the only company that can build submarines outside of the Electric Co., which you know is the successor to the old Holland Co. We were very anxious to secure competition, and they said that if we would give them a little time they would be able to reorganize and fulfill their contracts.

Mr. ROBERTS. You are referring now to the submarines G 1, 2, and 3?

Secretary DANIELS. Yes. The Lake people are in financial trouble and have not been able to make deliveries according to their contracts. They came to me Monday and said that they thought they would be able to finance the company, that one man had agreed to take \$50,000 of stock and another \$50,000 of bonds, and that they would be able to go ahead and promptly finish their contracts.

Mr. ROBERTS. Mr. Secretary, you have not answered the question which I asked you, Whether they had delivered to the Government one or more of that class of boats, G 1, 2, and 3?

Secretary DANIELS. Capt. Winterhalter tells me that G 1 has been delivered.

Mr. ROBERTS. When was that boat delivered?

Secretary DANIELS. I will ascertain. Certainly it has not been delivered since I have been in office. The original date of delivery was to have been May 3, 1910. Being the first of her type, there were numerous changes in design, and she was not delivered at the New York Navy Yard until October 18, 1912.

Mr. ROBERTS. Have submarines G 2 and 3 been completed?

Secretary DANIELS. We are completing them in the New York Navy Yard. G 2 will be finished February 16, but the date for G 3 has not yet been set.

Mr. ROBERTS. How does it happen, Mr. Secretary, that the department is building those two boats in the New York Navy Yard?

Secretary DANIELS. The Lake Co. is in financial straits, and we decided to finish them in the New York Navy Yard. We have ample bond, and have reserved a part of their money. We are safe.

Mr. ROBERTS. You took those boats away from the Lake Co.?

Secretary DANIELS. We are finishing them, because we thought it was best to do so.

Mr. ROBERTS. And are holding them responsible for the cost of completing the boats?

Secretary DANIELS. We are holding their bond and the payments have been deferred.

Mr. ROBERTS. Those three boats total \$1,315,000. The Government has obligated itself to pay that company \$1,315,000 for those three boats authorized from 1906 to 1909, and thus far we have gotten one boat completed and delivered to the Government. Can you tell us, Mr. Secretary, what the Government has done in the way of operating, handling, and maneuvering the one boat delivered?

Secretary DANIELS. She has been in commission some time.

Mr. ROBERTS. Has she been operated since she has been in commission?

Secretary DANIELS. I do not know.

Mr. ROBERTS. Is there anybody in the department from whom we can ascertain that information?

Secretary DANIELS. Yes. I will insert the reports which have been made on this boat.

MEMORANDUM.

The *G 1* was launched February 8, 1911. Held preliminary acceptance trial trip September 4, 1912, and was preliminarily accepted by the Government October 18, 1912, on which date she was delivered at the navy yard, New York. On October 13, 1913, she was given a final trial by the Board of Inspection and Survey for Ships, which reported, in part, as follows:

CONDITION OF MACHINERY.

All defects reported on preliminary trial have been remedied, as well as others which developed in the course of repairs made while the vessel was at the New York Navy Yard. A number of alterations were made at the same time, and it is believed that, so far as her machinery is concerned, the vessel is now ready for active service. This opinion is based more on an examination of the machinery equipment and statements made by her commanding officer than on actual trials, which latter were inconclusive. The vessel had been away from a navy yard too short a time to tune up and get in shape for high-speed running, and it was considered inadvisable to run the risk of casualties in the absence of adequate preparation.

While no repairs are now necessary and no radical changes advisable, pending a thorough trying out of present machinery installation in service, it is pertinent to pass in review a number of criticisms on present machinery:

The centrifugal pumps for supplying circulating water to gasoline engines are not altogether satisfactory. No additions or changes are, however, recommended at this time.

The bedplate and the housing bolted thereto and acting as a stiffener appear to be sufficiently rigid.

ITEMS RECOMMENDED BY BOARD.

Strengthen the foundations under the main engines if found to be necessary after use in service.

There is a doubt as to the sufficiency of these foundations owing to the reported lack of rigidity of the ballast tanks on which the engines set. These tank tops are reported to have deflected under the deep-submergence test.

Any lack of rigidity in these foundations can only be determined by service tests, and the question should be decided after sufficient trial at sea. If strengthening is required, the work can only be done in dock, after the engines and bedplates are removed, and would be chargeable against the contractors.

Finally the board reports as follows:

"First. From an examination of submarine *G 1*, the board is of the opinion that no weaknesses or defects have appeared in the hull, fittings, equipment, or appurtenances of that vessel, except as are noted in this report.

"Second. From an examination of submarine *G 1*, the board is of the opinion that there are no defects in the machinery or appurtenances or any parts thereof, except as are noted in this report. This opinion is not based on high-powered trials which could not be held, but upon an examination of the machinery and statements of the commanding officer.

"Third. From an examination of submarine *G 1*, the board is of the opinion that there have been no failures, breaking down, or deterioration, other than that due to fair wear and tear, of part or parts of the machinery, engines, or appurtenances, except as noted in this report.

"Fourth. The *G 1* had not done sufficient cruising to enable the board to express an opinion of her ultimate capabilities. At the time of the final trials the vessel had been away from the navy yard about 10 days, and had not 'shaken down' sufficiently to warrant the undertaking of high-speed trials. From an examination of the machinery and as a result of the trials held the board is of the opinion that the *G 1*, after proper 'shaking down' will be in proper condition for the service for which she was constructed, excepting only such items as are mentioned in this report.

"Fifth. The board deems it very unfortunate that the *G 1*, the first of a new type of submarine, has been able to do practically no cruising between preliminary and final acceptance trials. It was hoped that during this interval the

boat would cruise sufficiently to demonstrate her capabilities and enable the department to get a satisfactory comparison between her and the other type of submarines now in service."

Since her preliminary acceptance the *G 1* has made two trips to Narragansett Bay. While operating at that place both crank shafts have broken, and the boat has been operated under motors only, pending repairs to the crank shafts.

Mr. ROBERTS. We saw the boat last summer when the committee were inspecting the yards; it was in the dry dock in New York, and I was informed by a high official of the yard that it broke down several times going over from the place where it was built around to the yard, and I have been advised that the Government has had no use whatever out of the boat during the year that we have had it, that it has been under repair.

Secretary DANIELS. I asked Admiral Watt, who has charge of that, about the boats built by the Lake Co., and he said they were all right, that the Lake co. and the Laurenti Co. built splendid boats. I have not personally examined the boats.

Mr. ROBERTS. It must be a splendid boat if we can not use it and it has been under repair for a year?

Secretary DANIELS. I should not say so.

Mr. ROBERTS. I understand that we have had to take the other two boats away from the contractor and build them ourselves?

Secretary DANIELS. Yes.

Mr. ROBERTS. Mr. Stephens suggests a question the answer to which I think, perhaps, will be brought out by questions I am going to ask. His question was, just what the Secretary meant when he said that the representative of the Lake Co. came to the department to make arrangements to complete its contract when the Government had already taken the boats away and were building them?

Secretary DANIELS. We did not take them away until after we had had a conference with them. They could not proceed, and we must have these boats.

Mr. ROBERTS. Submarines *L 5, 6*, and *7* were authorized August 22, 1912, and they call for a total of one million seven hundred-odd thousand dollars. The contract for those boats was awarded to the Lake Torpedo Boat Co. Is it not a fact that the Lake Torpedo Boat Co. has not been able to finance themselves to start even on the construction of *L 5, 6*, and *7* and that they are now negotiating with the department asking delays in the endeavor to raise capital to proceed with the contract for the last three boats?

Secretary DANIELS. They have a contract with Mr. Craig, of Long Beach, to build two of those boats.

Mr. ROBERTS. Two, it is stated in this table.

Secretary DANIELS. They said they would go ahead and build them and could finance themselves if we would award a contract to them for some other boats for which we advertised for bids some weeks ago. We have not done that.

Mr. ROBERTS. In other words, we have something like \$3,000,000 for submarine boats tied up with the Lake Co. We have one boat as a result of our dealings with them, which boat we have not had any use of, it being continually under repair, and they say that they will go ahead and complete the three boats last awarded, provided we give them a contract to build some more.

Secretary DANIELS. I have declined to make any contract. All the contracts were made before I came into office, and, of course, I do not know about them.

Mr. ROBERTS. There was a time limit, of course, as there is in all contracts with companies for all kinds of material?

Secretary DANIELS. Yes; there always is.

Mr. ROBERTS. Submarines L 5, 6, and 7 were authorized in 1912, a year and a half ago, and the company, if it is a reliable company, should have those boats under construction now?

Secretary DANIELS. Yes; certainly. It should have had them under construction a year ago.

Mr. ROBERTS. And the company has not even started them?

Secretary DANIELS. I do not think so.

Mr. ROBERTS. And apparently it is a dubious outlook whether they ever will?

Secretary DANIELS. We have them in this position, that they must show us absolutely that they have the money before we will even consider any other contract with them.

Mr. ROBERTS. You quoted Admiral Watt as saying that the Lake boat is a good boat?

Secretary DANIELS. I asked him about the two companies, and he said that the Lake and Electric companies make very good boats.

Mr. ROBERTS. Do you know what he bases that opinion on? It certainly can not be the actual use of the two types of boats.

Secretary DANIELS. No; I did not ask him that. I will put in the hearings a report he has made recently on these boats. I have been very anxious, if possible, to give a little leeway of only three or four months to see if this company could organize and carry out its contract. The Electric Boat Co. succeeded the Holland Co., and there is a suggestion that if we have only one company building the submarine boats we will be at its mercy as to price, and other things being equal I would be willing to wait three or four months, as I say, since they have been in trouble, rather than lose the chance of competition.

NAVY DEPARTMENT,
BUREAU OF CONSTRUCTION AND REPAIR,
Washington, D. C., February 4, 1914.

MEMORANDUM FOR THE SECRETARY OF THE NAVY.

Subject: Status of lake submarines.

1. Replying to your inquiry relative to the status of the various submarines of the lake type contracted for with the Lake Torpedo Boat Co., the following summary is submitted as to the facts relative to the placing of contracts for the different boats and their histories:

2. The annual report of the Secretary of the Navy for 1907, pages 17, 18, and 19, gives in brief the status of submarines at that time. A quotation from the conclusion of this part of the report is as follows:

" * * * The department has since obligated a portion of this balance, subject to the decision of the Lake Torpedo Boat Co. to accept the department's proposition to purchase a submarine boat, to be built by the Lake Torpedo Boat Co., if said boat, upon completion and test, 'shall prove equal, in the judgment of the Secretary of the Navy, to the best boat owned or contracted for by the United States on the 2d of March, 1907,' no payment on account of the vessel to be made, however, except in the event of its acceptance by the Government."

No contracts had been made with the Lake Torpedo Boat Co. for any submarines at that time, but this agreement referred to was entered into with that company and signed February 3, 1908, for one submarine. The agreement contained the clause that the submarine should be at least the equal of the best boat owned or contracted for by the United States on March 2, 1907.

3. This submarine, the *G 1 (Seal)*, was constructed by the Lake Torpedo Boat Co. at the works of the Newport News Shipbuilding & Dry Dock Co. When practically complete she was brought to Bridgeport and completed there. The *G 1* was presented for preliminary trials in September, 1912. The precept to the board was dated August 23, 1912, and contained the following clause (C. and R. No. 26,038-E. 33) :

"The trials will take place as specifically provided in the eleventh and twelfth clauses of the 'agreement relating to the construction of a Lake submarine torpedo boat of about 500 tons displacement when submerged, and providing for the purchase thereof if conditions are fulfilled,' dated February 3, 1908, as modified by the department's letter No. 9,314-65, of May 7, 1912, copies of which are inclosed herewith for the board's information."

4. The trials were run, and in the report of the trial board, dated September 13, 1912 (C. and R. No. 26,038-E. 33), the following statements were made :

"Twelfth. The vessel * * * is found to be * * * in strict conformity with the agreement * * * except as noted in the list of unfinished work"; and

"Thirteenth. The vessel has yet to make a 24-hour trial at sea. The report of this trial will be made as soon as completed. With this exception the vessel is in all respects complete and ready for delivery in accordance with the requirements of the agreement, except as noted in the list of unfinished work."

As a consequence the Bureaus of Construction and Repair and Steam Engineering in their joint indorsement of September 27, 1912 (C. and R. No. 26,038-E. 33; S. E. No. 78,219-393-2-N.), made a recommendation as to acceptance, a quotation from which is as follows :

"1. The bureaus understand that *G 1*, in the opinion of the trial board, 'is at least equal in value for naval purposes to the best boat owned by the United States or under contract therefor on the 2d day of March, 1907,' and therefore recommend that when the 24-hour trial at sea has been satisfactorily completed, all work for which the contractors are held responsible has been made good, and the vessel delivered to the Government, *G 1* be preliminarily accepted under the terms of the agreement."

5. The president of the trial board, in his report of October 12, 1912 (C. and R. No. 26038-E. 33), stated with regard to the 24-hour trial at sea :

"* * * I have to inform the department that this trial has been satisfactorily completed * * *"

and further in this report stated—

"* * * It is further recommended that the vessel be preliminarily accepted * * *"

The Bureaus of Construction and Repair and Steam Engineering therefore recommended that the Lake Torpedo Boat Co. be authorized to deliver the *G 1* at the New York Navy Yard, and the department (in its letter No. 9314-83 and 85 and 86, of Oct. 16, 1912) authorized the Lake Torpedo Boat Co. to deliver the vessel. She was delivered at the New York Navy Yard on October 18, 1912. The contract date of completion was May 3, 1910, so that at time of delivery she was actually 2 years 5 months and 15 days overdue.

6. Since her delivery various accidents have happened, in particular to the main engines and main motors, which have continued to keep the *G 1* under repair for a considerable length of time.

THE "G 2."

7. The first Lake submarine for which a contract was placed, and the next to be considered, is the *G 2 (Tuna)*. On submarines Nos. 20 to 27, authorized by the act of May 13, 1908, the Lake Torpedo Boat Co. submitted bids for 1 to 8 boats. Other bids were the Electric Boat Co.'s and the American Laurenti Co.'s. Comparing the bids of the Lake Torpedo Boat Co. and of the Electric Boat Co. for boats in accordance with the circular requirements, the unit prices submitted by the Lake Torpedo Boat Co. were the lower (although the cost per ton was greater). However, the board on construction recommended for reasons stated below, notwithstanding the lower prices bid by the Lake Torpedo Boat Co., that contract for only one boat be awarded them. Extracts from the board's indorsement are as follows (Dec. 1, 1908; Navy Department No. 26506-28) :

"14. Of the submarine vessels for which bids have been submitted, only one type has heretofore been built under contract with the Navy Department, viz.,

the type submitted by the Electric Boat Co. The department is familiar with the conditions under which competitive tests for submarine boats have heretofore been conducted in conformity with the specific direction of Congress. Although the boat submitted by the Lake Torpedo Boat Co. in that competition did not receive the favorable recommendation of the trial board, the department, on February 3, 1908, entered into an agreement with the Lake Torpedo Boat Co. to build a boat of the Lake type and submit the same for exhaustive tests under the supervision of a board appointed by the Secretary of the Navy, and upon satisfactory completion of such tests the boat to be purchased at a price of \$450,000. It is now practically 10 months since this agreement was executed, but the actual work of construction of the boat has not yet been begun, and, so far as the bureaus are aware, no actual contract for the construction of the boat has been entered into with the Bath Iron Works, at whose yard a small quantity of material has been delivered.

* * * * *

"16. The board considers it of great importance that as much competition as possible be developed in connection with the construction of submarine boats * * *."

The board on construction then made a definite recommendation as follows:

"To the Electric Boat Co., four boats.

"To the Lake Torpedo Boat Co., one boat.

"To the American Laurenti Co., one boat."

It was recommended at that time that the other two boats be built at a navy yard. This was not done, and contracts for these other two boats were awarded to the Electric Boat Co. The department approved the recommendation, and on April 21, 1909, signed the contract for the *Tuna* (G 2).

8. The G 2 was constructed for the Lake Torpedo Boat Co. at the works of the Newport News Shipbuilding & Dry Dock Co., she being taken to Bridgeport for the last part of the work and builders' trials. On November 6, 1913, the G 2 being then practically complete, but not having had her trials, the Lake Torpedo Boat Co. requested the Navy Department to take over the G 2 and continue work on her in any manner that the department might see fit (C. and R. No. 6097-A. 97). Therefore, on November 6, 1913, the department declared the contract for this submarine forfeited, and on December 1, 1913, the G 2 was delivered at the New York Navy Yard. The contract date of completion was August 21, 1911, so that when taken over by the Government the G 2 was 2 years, 2 months, and 16 days overdue.

9. Since that time work on the G 2 has been prosecuted at New York, and she has been practically completed. She has recently made a trip from the New York yard to Newport and return, and is now to be operated by her naval crew in preparation for the preliminary trials.

THE "G 3."

10. On the next submarines to be advertised for, Nos. 28 to 31, the Lake Torpedo Boat Co. again submitted bids, bidding on all four boats. The other bidder was the Electric Boat Co. Again, on designs in accordance with the requirements of the circular, the unit prices of the Lake Torpedo Boat Co. were lower than those of the other bidder.

The Bureaus of Construction and Repair and Steam Engineering, however, in their joint indorsement of April 30, 1910 (C. and R. 25418-E. 61 to 102), making recommendation as to award of contracts, brought out the periods of time required for building Lake submarines then under contract, as compared with the periods of the Electric Boat Co.'s submarines. An extract from this indorsement is as follows:

"15. It therefore appears that, while the Lake Boat Co. in each case promise earlier delivery, there is little in the department's actual experience to indicate the probability of fulfillment of such a promise."

It was therefore recommended by the bureaus that contract for three boats be awarded to the Electric Boat Co., and for one to the Lake Torpedo Boat Co. The department approved this recommendation, and on January 19, 1911, signed the contract for one submarine with the Lake Torpedo Boat Co. This was the G 3 (*Turbot*).

11. The construction of the G 3 was undertaken at Bridgeport at the works of the Lake Torpedo Boat Co. On November 6, 1913, the Lake Torpedo Boat Co. requested the Navy Department to take over the G 3 and continue work on her in any manner which the department might see fit. The department, therefore, on November 6, 1913, declared the contract for the G 3 forfeited, and

directed that work should be carried on by the Government on the vessel at the Lake Torpedo Boat Co.'s works, this work to be expedited so that she might be launched and taken to the New York Navy Yard as soon as practicable. At this time all hull work was practically complete, but the vessel had no engines nor her storage battery. Work was carried on in this fashion, and on December 27, 1913, the *G 3* was launched, and on December 31, 1913, delivered at the New York yard. She is now being completed at the New York Navy Yard. The contract date of completion of the *G 3* was September 19, 1912, so that when taken over by the Government to complete she was 1 year, 1 month, and 18 days overdue.

THE "L 5," "L 6," AND "L 7."

12. On submarines Nos. 40 to 47, authorized by act approved August 22, 1912, the Lake Torpedo Boat Co. again submitted bids on 1 to 8 boats. As before their unit prices for boats in accordance with the circular were lower than the Electric Boat Co.'s. However, in the joint indorsement of the Bureaus of Construction and Repair and Steam Engineering recommending award of contracts (C. and R. No. 28503-E. 20, Dec. 31, 1912) this statement was made:

"8. The bids as submitted by the Lake Co. are slightly lower than the bids as submitted by the Electric Boat Co., but in view of the record of the Lake Co. as regards progress toward completion of the two submarines now under construction by them, the bureaus recommend that the seven vessels remaining be distributed between the two companies able to supply satisfactory vessels."

Recommendations was therefore made that contracts for three boats be awarded to the Lake Torpedo Boat Co. and five to the Electric Boat Co. The department approved this recommendation, and on March 15, 1913, signed contracts for three submarines with the Lake Torpedo Boat Co., the *L 5*, *L 6*, and *L 7*.

13. Of these boats, the *L 5* was to be built at Bridgeport, and the *L 6* and *L 7* at the works of the Craig Shipbuilding Co., Long Beach, Cal., for the Lake Torpedo Boat Co. At the present time practically no work has been done on these boats; the degree of completion of the *L 5* being approximately 7.5 per cent, and no progress at all having been made on the *L 6* and *L 7*. The contract time for completion of the *L 5* and *L 6* was 24 months, and of the *L 7*, 25 months, and to date practically 11 months of that time has elapsed. All work on plans, etc., was stopped at the time the Lake Torpedo Boat Co. discontinued work on all vessels at their works. The Navy Department, however, at the time of taking over the *G 2* and *G 3* (Nov. 6, 1913), advised the Lake Torpedo Boat Co. that the contracts for submarines *L 5*, *L 6*, and *L 7* would not be declared forfeited at that time, and that the company would be allowed such reasonable time as might appear appropriate for proceeding with the work after the contemplated reorganization of the company should have been effected.

14. The above summarizes the present status of all boats built or building by the Lake Torpedo Boat Co., the *G 1*, *G 2*, *G 3*, *L 5*, *L 6*, and *L 7*.

WATT.

Mr. ROBERTS. Is it not a fact, Mr. Secretary, that the department has, and is to-day specifying the things they desire in the submarine boats, requiring the bidder or contractor to put those things in, and is it not a fact that the department is dictating the price that shall be paid for the boats?

Secretary DANIELS. Not directly. We want competition.

Mr. ROBERTS. Is not that practically so?

Secretary DANIELS. We say that we want a boat to fill certain requirements, and the Electric Boat Co. can build it and the Lake Boat Co. can also build to fill those requirements.

Mr. ROBERTS. Two different types of boats?

Secretary DANIELS. Yes. Our experts say that they are different in type, but are not different as to quality, and that either boat is a good boat.

Mr. ROBERTS. So far as construction is concerned. I am speaking now of utility. Two articles may be equally well constructed, so far as the mechanical part is concerned, and yet one be considered far

less valuable than the other, because of the type or design or features that enter into it.

I want to ask you, Mr. Secretary, if the department asked for bids from foreign concerns?

Secretary DANIELS. No.

Mr. ROBERTS. On the call for boats authorized last year?

Secretary DANIELS. No. We did this: The General Board and the Secretary's aids suggested that of the four boats to be built one should be bought abroad, for the reason that the builders of submarines keep their building plans secret. None of our naval officers can go into their factories. It appears to be a good rule every now and then to buy a boat or some munition of war abroad in order to learn of any new discovery foreigners have made. That recommendation was made to me some weeks ago.

Mr. ROBERTS. Would it be the purpose to introduce any considerable number of that type into our Navy?

Secretary DANIELS. The only suggestion they have made was that we should buy one so as to study and see what improvements they have made, if any.

Mr. ROBERTS. Have you given any consideration to the question of introducing into our Navy a number of different types of submarine boats?

Secretary DANIELS. The only consideration I have given was as to whether we should buy one boat abroad and get this information. Only for that purpose. No decision has yet been reached on that recommendation.

Mr. ROBERTS. We authorized in the last bill, March 4, 1913, four additional submarines, Nos. 48, 49, 50, and 51. I gather from what you have said that you have asked for proposals for those boats?

Secretary DANIELS. Yes; I have asked for those also. They have the patents, and the trouble about our building those boats in the navy yards is that we can not use their patents. Our proposition to the company was that we would build one of the boats in a navy yard and would pay them a certain fixed sum for the complete working plans and license to construct. I think it would be very well if we could do that.

Mr. ROBERTS. You have not awarded the contract for those four boats?

Secretary DANIELS. They are all pending.

Mr. ROBERTS. From whom did you ask that proposition?

Secretary DANIELS. The Electric Boat Co. Their suggestion was that they would do so provided they got the contract for two of the boats themselves; that then they would give us this privilege at a reasonable rate.

Mr. ROBERTS. What becomes of the fourth boat?

Secretary DANIELS. I have not acted upon any of them. That is just a suggestion. They say that they must have at least two of the boats and that then they will give us the permission at a certain percentage of the cost. Every time we spent a dollar we would give them 10 cents. In the building of the first boat in a navy yard we might spend money on experiments, and so we said that we would not consider that, that they must give us a fixed sum, and have their men help us.

Mr. ROBERTS. As I understand, in the opinion of the General Board, it is very desirable that we have at least 100 submarine boats now?

Secretary DANIELS. I think there is a recommendation to that effect.

Mr. ROBERTS. We have of all kinds, built, building, and authorized, 51, and, as I have pointed out here, of the boats awarded to the Lake Co. one of them has been delivered and we have never been able to use it, two are under process, and three have not been started at all. Perhaps the Secretary can tell us how many submarines we actually have in the water that we can use?

Secretary DANIELS. On the Atlantic coast 7, 5 at Panama, 1 at Charleston, 6 in the Pacific Fleet, 6 in the Asiatic Fleet, 2 at Puget Sound, and we have 19 building.

Mr. ROBERTS. As I follow your figures, we have 27 actually available for use?

Secretary DANIELS. Yes.

Mr. ROBERTS. In those 27 submarine boats, do you include all of the earlier types that, of course, are not as efficient as the more recent ones?

Secretary DANIELS. Yes; we include them all.

Mr. ROBERTS. They have their use, but it is limited, as compared with the more recent ones?

Secretary DANIELS. Yes.

Mr. ROBERTS. And we have 19 building?

Secretary DANIELS. Yes.

Mr. ROBERTS. We have something over \$3,000,000 tied up with the Lake Co., and we have an additional \$400,000 or \$500,000 invested in the *Laurenti* boat, so called, making something over \$3,500,000, to insure competition, as I understand.

Secretary DANIELS. In the submarine-boat matter I am not an expert or very familiar with it, but the amounts are not as great as that, and it is not merely to insure competition, but to get the best ideas of the different makers.

Mr. ROBERTS. Do you not think that we have enough money tied up with other concerns to warrant us in going ahead and doing business with a concern that will do and can do business, which has showed itself capable?

Secretary DANIELS. I have said to those people, "I will not consider awarding anything to you, unless you can guarantee me that you have the money to build promptly and fulfill your contracts."

The CHAIRMAN. This table that the Secretary was looking at shows 27 in actual use and 19 building, which makes 46, 4 authorized but not yet contracted for, and 1 has been stricken from the Navy list.

Mr. ROBERTS. That accounts for all of them.

You quoted Admiral Watt as saying that the Lake boat is a good boat. We, of course, want the best boats in the Navy, and we want the best submarine, and we want the best of everything?

Secretary DANIELS. Yes.

Mr. ROBERTS. Is the department doing anything to definitely settle the question as to the superiority of these two types of boat? You have both types now.

Secretary DANIELS. If the Lake Co. had the money to build their boat I am advised by the experts in the department that both boats

are good, and I have never heard any suggestion from the experts that one boat was better than the other.

Mr. ROBERTS. Have you read in the archives of the department of some years ago—the department did provide for competition between these two types of boat—that in the competition one type proved itself vastly superior to the other?

Secretary DANIELS. I am not familiar with that.

Mr. ROBERTS. I am speaking of your records, what is shown by your reports?

Secretary DANIELS. I have not seen that.

Mr. ROBERTS. I would suggest that you can find all of that in your records. There were exhaustive tests of the two types, one type proving itself vastly superior to the other.

Secretary DANIELS. I have not gone into that.

Mr. ROBERTS. I am not trying to give you my impression, I am giving you the substance of the report.

Secretary DANIELS. When the advertisement was made and the bids came in, of course we could not act upon them, because the Lake people were in financial trouble. I was not willing to award any contract to them unless I knew they had the financial ability to carry it out. Therefore I have been concerning myself mostly with finding out if we could consider them. I have not gone into these other matters as I will before awarding the contract.

Mr. ROBERTS. Assuming and admitting that the Lake people are on their feet financially and able to carry out any contract awarded them, and having in our possession one of their boats, built and paid for, would it not occur to you as a very good plan to put the Lake boat and the Electric boat in competition in actual service, try out the two, and demonstrate which is the better of the two?

Secretary DANIELS. Undoubtedly; but I understood you to say, in the report you spoke of, that that had been done.

Mr. ROBERTS. Before awarding any more contracts to a concern that has been discredited in former competition and has now over \$3,000,000 of our money tied up and is unable to build any boats?

Secretary DANIELS. You ought not to say that they have \$3,000,000 of our money tied up.

Mr. ROBERTS. It is tied up so far as getting the boats is concerned. We have made a contract and we are not getting anything. We have been six or eight years trying to get something.

Secretary DANIELS. I can prove an alibi as to the past six or eight years.

Mr. ROBERTS. I am simply referring to the time when the boats were authorized and we obligated the money.

Secretary DANIELS. I have never heard that this boat of the Lake Co. was not good. Of course, I shall examine the reports of the experts on that boat and look into it thoroughly before any award is made.

Mr. ROBERTS. I wish you would, because we want the best type of submarine boat that we can possibly have in the Navy and no other, and if one boat is better than the other I want the money to go for the better ship.

Secretary DANIELS. All I wanted to do was to get permission to use enough of their patents so that we could build one of these boats ourselves and try it out, and, if possible, I did not want to be put

in a position of getting into the same place about submarines as we are about armor plate, powder, and everything else, where we have practically only one company to buy from, and therefore I have been anxious, if those people could do the work well and get on their feet, to give them a few weeks to do so.

Mr. ROBERTS. I quite agree with you, Mr. Secretary, in that, but if there is a submarine that is superior to other types and we can make any arrangement with the owners of the patents whereby they will permit us to manufacture it in our yards, I would like to see it done. I would like to see something done to get the benefit of the congressional appropriations for the purpose for which the money is appropriated, and not have the matter delayed for six to eight years when we really need every boat, according to our best and highest authority, that we have contracted for. I do not care what the reason is that prevents us from doing it, but it seems to me that the department ought to take a pretty rigid stand and insist that the people that they make these contracts with either go ahead or throw up the contract, and let the department try somewhere else to get the thing we want.

Secretary DANIELS. I have just said that the Craig people at Long Beach had a contract to build two of these boats, and they had to stop when the Lake Co. became financially embarrassed. Their representatives were here the other day, anxious to go ahead. The Lake people say if they could have their overhead charges reduced that the people at Long Beach and at New London or Bridgeport would construct these boats. I have not been convinced on the financial end yet. I gave them notice that they would have to do business by next Monday. I can not wait any longer.

Mr. ROBERTS. Did you see or was it called to your attention in any way an advertisement of the Lake Co. in one of the newspapers soliciting or advertising the sale of its securities and using the name of the Navy Department as a sort of implied guaranty that the company was all right and could be safely invested in?

Secretary DANIELS. They did not say that.

Mr. ROBERTS. Was not that the implication?

Secretary DANIELS. They said this, that they wished to issue bonds, and the assets of the company were as follows: So much material, so much land and buildings, and so much as value in their contract made perhaps a year or more ago with the Government to build these submarine boats out of which they could make a profit.

Mr. ROBERTS. Saying that the Secretary of the Navy will award them the contract?

Secretary DANIELS. Stating that they could keep the contract if they could finance themselves. They had a right to say that. I sent them a letter saying that if they could finance themselves and give us assurance of their compliance with their contract we would not cancel their contract.

Mr. ROBERTS. The department has had assurance in the past as to submarines G 1, 2, and 3 that they would be delivered, and they have had extension after extension on those three boats?

Secretary DANIELS. I think they have.

Mr. ROBERTS. Is there any assurance in view of the past that their professions in the future will be carried out any more promptly?

Secretary DANIELS. The only assurance is that I told them that they would have to show me that they had the money and show me by Monday.

Mr. FARR. What is the average cost of a submarine?

Secretary DANIELS. Between \$500,000 and \$600,000.

Mr. ROBERTS. \$615,000 was the cost of the last one.

Secretary DANIELS. I doubt whether they are going to be able to do it. I hope they will, because it will secure competition.

Mr. ROBERTS. What does it relate to, giving them additional contracts or simply allowing them to attempt to carry out the contracts they have already?

Secretary DANIELS. It relates to all dealings with them. We hold all matters open until Monday to see if they can show that they are able financially to carry out the contracts; otherwise we will take the whole matter up. I rather think it will be impossible for them to give us assurance enough to justify us in awarding them anything else; that is my fear.

Mr. STEPHENS. You said that the Lake Co. had failed to comply with its contract owing to financial embarrassment and that the Long Beach Co. had been given a part of that contract, sublet to it by the Lake Co.?

Secretary DANIELS. I understand so.

Mr. STEPHENS. And that the Long Beach Co. is ready and willing to go ahead with their contract, and that if the Lake Co. could meet its obligations with the Long Beach Co. it would do so?

Secretary DANIELS. That is my understanding. I have given them until Monday to go into the matter fully.

I was speaking to you of the cost of oil in our ships. The cost of oil has been mounting so high that we have been looking to see where we could get an oil supply. Some years ago certain lands in California, as I understand, were set apart for the use of the Navy. Is that right, Mr. Chairman?

The CHAIRMAN. My understanding is that President Taft withdrew certain lands in California from entry, but they are in litigation; that several concerns, the railroad company and a lot of other concerns, are litigating the title of the Government, and that they are at this time involved in suits.

Secretary DANIELS. I had hoped to be able to present to you a fuller statement. We have been conferring with the Commissioner of Indian Affairs, the Secretary of the Interior, and the Attorney General. The Attorney General has employed a lawyer who is to do nothing else but to fight out these titles in California, but of course they are in litigation, and I do not see how we can get oil from there shortly.

Mr. BUTLER. Please tell us, Mr. Secretary, whether or not there is an assurance of sufficient oil there to supply our Navy for some time to come?

Secretary DANIELS. The wells there have proved very good. The Geological Survey sent a man over all of those lands and we have had a man over the lands, and the reports from these experts is that the supply is very good. We have a committee now composed of a naval officer, a representative of the Bureau of Mines, and a representative from the Indian Office studying to see what can be done with the oil supply. I had hoped to have a report ready at this meeting in order to be able to place a definite recommendation before you.

The CHAIRMAN. Mr. Secretary, here is a copy of the proclamation of President Taft, dated September 2, 1912, withdrawing those lands, which, with your permission, I will place in the record.

Secretary DANIELS. I wish you would, Mr. Chairman.

(The proclamation referred to by the chairman follows:)

ORDER OF WITHDRAWAL.

NAVAL PETROLEUM RESERVE NO. 1.

It is hereby ordered that all lands included in the following list and heretofore forming a part of Petroleum Reserve No. 2, California No. 1, withdrawn on July 2, 1910, from settlement, location, sale, or entry and reserved for classification and in aid of legislation under the authority of the act of Congress entitled "An act to authorize the President of the United States to make withdrawals of public lands in certain cases" (36 Stat., 847), shall hereafter, subject to valid existing rights, constitute Naval Petroleum Reserve No. 1 and shall be held for the exclusive use or benefit of the United States Navy until this order is revoked by the President or by act of Congress. To this end and for this public purpose the order of July 2, 1910, is modified and the withdrawal of that date is continued and extended in so far as it affects these lands.

Mount Diablo Meridian.—T. 30 S., R. 22 E., sec. 24, all. T. 30 S., R. 23 E., sec. 10, all; secs. 12 to 30, inclusive; secs. 32 to 36, inclusive. T. 31 S., R. 23 E., secs. 1 to 4, inclusive; secs. 10 to 14, inclusive. T. 30 S., R. 24 E., secs. 17 to 20, inclusive; secs. 28 to 34, inclusive. T. 31 S., R. 24 E., secs. 1 to 12, inclusive; sec. 18, all.

(Signed)

WM. H. TAFT, *President.*

SEPTEMBER 2, 1912.

Mr. ROBERTS. Mr. Secretary, you spoke of certain employees making investigations. Do you know the nature of the investigations which they make; do they bore or look simply at the surface indications?

Secretary DANIELS. I do not know. We have a committee composed of representatives of three departments looking into that matter. They are to meet again next week. The expert of the Geological Survey has ridden over all that land.

Mr. ROBERTS. What occurs to me is this: I realize the need of oil for the Navy and am anxious to secure it, but we ought to be very certain before we invest any considerable amount of money in any oil field that the oil is actually there. There should be certain other tests than mere surface investigations.

The CHAIRMAN. The Secretary stated in the beginning that he had not sufficient information to justify him in making any specific recommendation at this time, and so he is just discussing the question.

Secretary DANIELS. Mr. Chairman. I would like to put in the record a memorandum showing the need of oil, and I would like to state along that line that we should have an appropriation of, say, not less than \$500,000 to buy lands, if expert testimony showed that there was an abundance of oil, or to lease them. We are much interested in this matter. I was talking the other day with the director of mines and with Secretary Lane, and the director of mines thought that there were Indians lands in the Osage country that we might lease and that there was an abundance of oil. I think we ought to look into that and have authority to lease certain oil-bearing lands if we can get them at a reasonable figure.

Mr. BUTLER. When you come to dealing with the Indians, they will want the best price possible?

Secretary DANIELS. Yes. Of course, we would have to pay them.

Mr. BUTLER. I do not see how the Government could do that?

Secretary DANIELS. They lease their lands now and are paid a certain royalty.

Mr. BUTLER. Maybe they do not pay enough?

Secretary DANIELS. They have biddings, as I understand, at certain times.

Mr. BUTLER. It is all under the control of our Government?

Secretary DANIELS. If we could lease the lands it would be better for the Indians and better for the Government. As it is, they have been pretty well exploited.

The CHAIRMAN. Mr. Secretary, in connection with the suggestion you have made of an appropriations of \$500,000 to be available either for the purchase of lands or for the leasing of oil-bearing lands, what would that fund be available for—for developing that oil and manufacturing it after you secured the lands either by purchase or lease, and how much additional money would be required for the construction of plants, for tanks, for pipe lines, or other instrumentalities for making the oil available to the ships?

Secretary DANIELS. Well, in most of the oil territory there are pipe lines.

The CHAIRMAN. And under the act of Congress they are made common carriers?

Secretary DANIELS. Yes.

The CHAIRMAN. Are they, in fact, common carriers at a price that the Government could use them to advantage?

Secretary DANIELS. I am not familiar with that, Mr. Chairman.

The CHAIRMAN. Ought not all of those matters to be gone over very carefully so that we could have at least reasonable business data before making an investment, both with reference to that and also better information as to the probable result of the California litigation, so that when we act we could know which to elect to pursue and on what line of business we were proceeding?

Secretary DANIELS. That, of course, makes for delay, and the price of oil is soaring all the time. We have now using oil 6 battleships which use coal as an auxiliary, 25 destroyers, 1 monitor, 27 submarines, 1 fuel ship, and several tugs and barges.

The CHAIRMAN. All the new ships authorized are exclusively oil burners?

Secretary DANIELS. Sixty are now using oil only. We have now 6 battleships that are burning oil, 2 battleships burning oil as auxiliary to coal, and 4 burning oil only, 16 destroyers, 18 submarines, 2 submarine tenders, 1 destroyer tender, 1 supply ship, 1 transport, 2 fuel ships, and 2 fuel barges, making a total of 49.

Mr. ROBERTS. Have you estimated the amount of oil that we would require if all the ships mentioned were in commission and using oil?

Secretary DANIELS. I think you will find that in the testimony of the chief of the engineering department, Admiral Griffin. I have not gone into that.

The CHAIRMAN. I will state that the estimates are that for the fiscal year 1915 they will consume 30,000,000 gallons as against about 14,000,000 gallons for the current year, and Mr. Roberts's question takes in the additional ships that are not now constructed.

Mr. ROBERTS. Further than that, Mr. Chairman. I want to find out how much oil would be required if all of the ships that can use it should use it, in order to ascertain what is the maximum quantity of oil which would be required under the conditions named.

Secretary DANIELS. The consumption for 1915 is estimated at 42,000,000 gallons. In time of war the activity of the fleet will probably be three times its peace activity, necessitating 126,000,000 gallons.

Mr. ROBERTS. You spoke of California and Oklahoma?

Secretary DANIELS. Yes.

Mr. ROBERTS. Are there any oil lands in Texas that could be leased or purchased?

Secretary DANIELS. I do not think we can get any public oil lands in Texas; I do not know.

Mr. ROBERTS. Really, the only place that you hope to lease oil fields would be in Oklahoma?

Secretary DANIELS. Yes.

Mr. ROBERTS. You would not expect to lease productive oil fields from white people?

Secretary DANIELS. Hardly. Practically all of the probable oil-bearing lands not under Interior's supervision has already been leased.

Mr. ROBERTS. Because most of those fields are now being operated, and the price would be excessive?

Secretary DANIELS. Yes.

Mr. ESTOPINAL. I think I read something in one of the newspapers that you contemplated visiting the oil fields at Shreveport, La.

Secretary DANIELS. I said when I went to New Orleans I would stop by there and see what they had.

We have had several propositions from private owners of oil fields that if we would agree to take a very large quantity—to go, in a sense, into partnership—that they would guarantee us oil at a much cheaper price than we are paying. We are using very much more oil. All the navies are coming to that. All the English ships are being constructed for the burning of oil, except their latest battle-ships, in which coal burning has been incorporated. They have been very alert to secure oil fields in Mexico and in Central America. I think that we should look ahead of us to do something along that line in our own country.

Mr. ROBERTS. Are these people willing to make contracts at a fixed price?

Secretary DANIELS. They say they will.

Mr. ROBERTS. For how long a period do they propose to enter into a contract?

Secretary DANIELS. One man offered to enter into a contract for 10 years.

Mr. ROBERTS. At a fixed price all the time?

Secretary DANIELS. At a fixed price. I would suggest that you permit me to give you a statement a little later on the oil situation.

The CHAIRMAN. Mr. Secretary, as I understand, you have had some correspondence with the Director of the Geological Survey and some correspondence with one of the experts?

Secretary DANIELS. Yes.

The CHAIRMAN. Mr. Secretary, I will ask you if you will permit that correspondence be placed in the record?

Secretary DANIELS. Yes.

(The correspondence referred to by the chairman follows:)

DECEMBER 23, 1913.

The honorable the SECRETARY OF THE INTERIOR.

SIR: The question of the Navy Department owning its own oil fields and producing and refining its own fuel oil is being considered by this department.

It is desired to get the benefit of the best expert opinion on this subject. I therefore have the honor to request that, if practicable, the views of the Director of the Geological Survey, the Director of the Bureau of Mines, and of Dr. David T. Day, of the Geological Survey, be furnished this department as to the wisdom and desirability of the Navy following the procedure referred to in the preceding paragraph.

There are inclosed herewith three copies of a letter from Lieut. Commander David F. Boyd, United States Navy, on this subject, for reference to the officials mentioned, and it is particularly desired that the estimates and conclusions therein be examined and checked.

Sincerely yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

DEPARTMENT OF THE INTERIOR,
Washington, January 22, 1914.

The honorable the SECRETARY OF THE NAVY.

SIR: Replying to your letter of December 23, in which you ask for an expression of views from the Director of the Geological Survey, the Director of the Bureau of Mines, and Dr. David T. Day, of the Geological Survey, concerning the proposal that the Navy Department should own its own oil fields and produce and refine its own fuel oil, I have the honor to transmit herewith letters bearing on this subject from the Director of the Geological Survey, the Director of the Bureau of Mines, and Dr. David T. Day, in response to your request.

Respectfully,

FRANKLIN K. LANE.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, January 21, 1914.

MY DEAR MR. SECRETARY: In reply to your letter of December 23, 1913, asking my views as to the advisability of the Navy owning its own oil fields and producing and refining its own fuel oil.

Your letter calls attention particularly to estimates and suggestions which have been made in the Navy Department, and this phase of the subject has been considered briefly in a memorandum from Mr. Day, of this survey, which I have the honor to transmit herewith, in accordance with your request for his opinion.

Considered broadly from the point of view of economy to the Navy Department in the purchase of its fuel oil, it is wise to recognize some of the difficulties resulting from the lack of elasticity which any Government project must contend with. A commercial concern, for instance, is able to so dispose of surplus by-products as to take advantage of any fluctuations in market demands which are unusually sudden in the oil industry, and again, the commercial organization is able to utilize its transportation and sales facilities for the disposal of these various products with the effect of keeping the plant up to its full capacity at practically all times. However, these economies that give an advantage to the large corporation do not, in my opinion, offset the advantages attending Government ownership and operation with the purpose of furnishing fuel oil to the Navy. In any discussion of expenses of production of fuel oil, it must be kept in mind that costs to the Government are not to be compared with costs to the corporate producer, but rather with the prices put upon the product when sold to the Government. The profits in the oil-refining

business are believed to be sufficiently large to result in a satisfactory margin of safety in estimating for Government operation.

In addition to these possible economies in preventing the cost of fuel oil to the Navy from following the increase which is probable, and other benefits, I am inclined to give even more weight to the larger consideration of practical independence from all demands or requirements of commercial oil production and refining. If the Navy can exercise complete and efficient control over the subject of oil fuel from the stage of crude oil in the ground through to the finished product as served to the battleships, there must result an increased efficiency on the part of naval officers from this intimate association with oil technology, and also the advantage of applying promptly to the Navy's use such technological and purely scientific improvements in oil as may be derived from the investigations of naval officers or other experts within the Government service. There will be also a greater opportunity for promptly varying the nature of the fuel oil supplied to the vessels so as to meet demands of any new and improved engineering practice. It seems, further, that the confidential character which can be given to the preparation of fuel oil may become as important as that of the preparation of explosives.

Yours, very truly,

GEO. OTIS SMITH, *Director.*

HON. FRANKLIN K. LANE,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
BUREAU OF MINES,
Washington, January 26, 1914.

The honorable the SECRETARY OF THE INTERIOR.

SIR: In response to a request for an expression of opinion as to the wisdom and desirability of a governmental policy through which the Navy Department would own its own oil fields and would produce and refine its own fuel oil, I respectfully report as follows:

I am convinced that it is a wise policy for the Navy Department to own or control at least two oil areas, one on the Pacific coast and one in the mid-continent field, tributary to a gulf or Atlantic port; each of these fields capable of yielding a supply exceeding the total needs of the Navy Department for a number of years to come.

(1) The carrying out of such a policy will give the best assurance of an adequate and permanent supply of oil suitable for the needs of the Navy.

(a) No other system could better facilitate the rapid development and exhaustion of an oil field than the system now generally followed, which encourages a large number to rush operations in an oil field with the expectation on the part of each operator that through this hasty procedure he may extract the oil from beneath his neighbor's fields, and at the same time prevent his neighbor from extracting the oil under his own fields, by extracting it first.

Meanwhile, also, the rapidly increasing demand for American oils in many different countries is accompanied by a steadily rising price, which in turn stimulates the producer to even more rapid production.

The large and rapidly increasing investments of foreign capital in American oil fields, and the large and long-term contracts now being made by these alien companies and even by domestic corporations for supplies of American oil to be delivered in foreign countries for both governmental and private uses, are rendering all the while more certain the rise in the price of oil for domestic consumption, and are rendering more necessary the adoption of such a policy as a means of insuring a permanent and a satisfactory supply of oil for our own Navy.

(b) There is in connection with this ever increasing and unregulated rush activity in oil development an increasing risk of largely reducing the value of our oil reserves through the penetration of underground waters into the oil-bearing strata in our different oil fields. The value of many oil fields is already being seriously reduced by such water invasion of the oil-bearing strata. And it will be only through the exercise of constant and vigilant supervision that even a naval-reserve oil area in any oil field can be protected from this underground menace, if unregulated drilling operations are permitted in the interior or about the borders of such reservation.

(2) The adoption of such a policy would, I believe, largely lessen the cost to the Government of an adequate future supply of oil for the Navy. In fact, I believe that if the Navy Department can be secure in its oil-land holdings on a reasonable basis, and can be authorized to arrange for the transportation and refining of its oils, the sale of the higher-priced light oils, which it will not need for its own use, will not only cover the cost of refining but will also cover or largely reduce the cost of the drilling, transportation, and storage of the oils needed for naval use. The price of oil is increasing, and will doubtless continue to increase with the growth of the demand for oil in different countries and for different purposes. It will probably increase by leaps and bounds. Thus, two and one-half years ago the price of Oklahoma oil increased abruptly from 48 cents to \$1.05 per barrel.

This certain increase in the price of oil will be due, not so much to a necessary increase in the cost of production as to an increase in the demand for oil, without a corresponding increase in the supply. By securing and reserving its own supply of oil, the Government can avoid having to pay the large increase in price which will come from this increase in demand for oil for naval and commercial uses in other countries.

I believe it good policy that the Government should refine its oil supply for the use of the Navy, for the following reasons, which, while applying to both the California and mid-Continent oil fields, apply to the latter fields with special emphasis:

(1) Such a plan would reduce the cost of a naval oil supply;

(2) Such a policy would insure for the Navy's use a more uniform product and the product best adapted to its needs. A 16B' gravity fuel oil obtained from a refinery is safer for naval use than a 16B' gravity fuel oil used in its natural or crude condition, as the latter is more likely to give off explosive gases.

(3) The experience growing out of both the extraction and the refining of the Navy's oil supply would give to the agents of the Government a more intimate knowledge concerning, and a better understanding of, the drilling, the refining, and the transportation factors in the petroleum industry of the country, and this knowledge would be of great service to the Government in its study and interpretation of the salient features of the industry in its relations to the public welfare.

I have read with care, and beg to express my approval of, the excellent presentation of the different phases of this subject by Lieut. Commander David F. Boyd in his memorandum on this general subject, prepared for the Chief of the Bureau of Steam Engineering of the Navy Department.

Respectfully,

J. A. HOLMES, *Director.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, January 21, 1914.

The SECRETARY OF THE INTERIOR

(Through the Director of the Geological Survey).

SIR: Your letter of December 23 transmitting a letter from the Secretary of the Navy, asking for my views as to the wisdom and desirability of the Navy owning its own oil fields and producing and refining its own fuel oil, has been received, together with a copy of a letter from Lieut. Commander David F. Boyd, United States Navy, on this subject.

I have carefully examined the letter of Lieut. Commander Boyd and find that the estimates of cost are conservative and in no case do they underestimate the cost of producing, transporting, or refining oil in so far as I am able to judge. On the other hand, it is probable that the refining costs of all kinds, with the possible exception of the cost of supervision, can be materially reduced.

A study of the statistical conditions concerning the oil trade of the United States convinces me that the price of fuel oil will probably increase steadily during the next few years. In making this forecast of the price of fuel oil it is recognized that the oil fields of California are capable of supplying oil in excess of the present production and in excess of the present consumption, although both production and consumption increased significantly during the year 1913. The consumption increased at a more rapid rate than the production, and overtook the production during the year.

The opening of the Panama Canal may be expected to result in the shipment of considerable quantities of crude petroleum and of fuel oil from California to the eastern coast of the United States. These shipments will be affected to a marked degree by the development of petroleum in Mexico. This Mexican petroleum is in general similar to the California oils, though containing much more sulphur.

The production in Mexico has been rendered more important within the last year by the opening of several additional wells of great capacity. The supply of petroleum in Mexico is now ample for existing contracts and to supply the increased transportation facilities, which include a fleet of about 40 tank steamers. These vessels are, on the average, larger than those ordinarily used in oil transportation.

The effect of this increased supply of fuel oil from California and Mexico will probably not be a reduced price of fuel oil. On the contrary, the increased supply may be expected to result in higher prices, because the total amount of fuel oil available from California, and from Mexico on the eastern coast, will be only a small proportion of the amount which can readily be consumed for steamship, railroad, and especially manufacturing purposes with considerable resultant advantage, even with higher prices of oil. The price, therefore, will rather depend upon convincing the consumer of the durability of the supply and rendering the oil popular. With increasing popularity the price of oil may be expected to increase.

The evident result of these statistical considerations is in favor of the policy suggested at the beginning of this letter—that is, for the Navy to produce petroleum and refine its fuel oil.

It should be pointed out that the more evidently necessary policy for the Navy in the immediate future is to supply large tankage at appropriate points and to collect in storage a much larger supply of fuel oil, to be purchased at the present comparatively low prices.

Very respectfully,

DAVID T. DAY, *Petroleum Statistician.*

Mr. BUTLER. Mr. Secretary, did I understand you to say that foreign Governments had secured oil concessions in Mexico?

Secretary DANIELS. Probably I should not have said foreign Governments, but people who have contracts with foreign Governments.

Mr. BUTLER. Not the Governments themselves?

Secretary DANIELS. No.

Mr. FARR. Mr. Secretary, has the Government any oil lands not in litigation?

Secretary DANIELS. Probably all of the California lands are claimed; some within the withdrawal are patented and some are in litigation. The Land Office has not as yet made a complete investigation.

Mr. BUTLER. The only opportunity is in California?

Secretary DANIELS. Yes; unless we can secure Indians lands in Oklahoma or in the ordinary course of business buy or lease other lands.

Mr. ROBERTS. Mr. Secretary, are you aware that the Admiralty was very seriously criticized for not making adequate provision for oil for the British Navy?

Secretary DANIELS. Yes. The First Lord of the Admiralty went before Parliament and secured an appropriation of £3,304,000 for the purchase of fuel. I think that we ought to look forward to like action.

Mr. TALBOTT. Mr. Secretary, would it not be as well if you secured the oil at different points?

Secretary DANIELS. Of course.

Mr. TALBOTT. In Oklahoma and California you are away from the base?

Secretary DANIELS. No; not in California.

Mr. TALBOTT. Not away from the base for that coast.

Secretary DANIELS. We get much oil now at Port Arthur. We have contracts to secure oil at certain places on both coasts and in the Gulf. We have oil ships which can carry oil, and so the great thing is to get oil lands. It is hard to get oil lands, and that is the reason we should begin early and press it.

Mr. ROBERTS. Mr. Secretary, do you think that if we had oil lands in California and developed them and were getting oil that it would have any effect on the price that you would have to pay for oil on the Atlantic coast?

Secretary DANIELS. Perhaps not at present, because the demand for oil is so great that the oil companies are able, by virtue of supply and demand, to fix their own price, but it would enable us to have our own oil.

Mr. ROBERTS. I realize that, but would it have any effect on the eastern producers if we had our oil fields on the west coast?

Secretary DANIELS. I do not know. I would like to ask you gentlemen this question: I have had suggestions from two parties who own large oil lands, one has a large field in Mexico, but he has not the money himself to develop it. He has been offered large sums for his lands, provided that he would sell a majority of the stock in his companies. He does not want to part with control, and his idea was, if we would furnish the money to develop this oil field that he would make a contract with us to furnish oil at a very reasonable price. I will give you the figures.

The CHAIRMAN. That is the gentleman who talked with you and me, and who said that if our Government would furnish him with about \$2,000,000 to procure oil ships and to build tanks on the Gulf coast he would furnish us with 7,000 barrels of oil a day?

Secretary DANIELS. Yes.

Mr. ROBERTS. Have any of the proposals from private parties emanated from those who had fields outside the territorial limits of the United States?

Secretary DANIELS. We have had such an offer from a man in Pittsburgh who has leased lands in the Indian Territory, but I have not felt like going very far with him, because they all begin by saying they will secure the Government with their securities, but we must advance money to develop the oil.

Mr. TALBOTT. That is a question whether it is policy or whether they can do it?

Secretary DANIELS. That is the question I wanted to present to the committee.

Mr. ROBERTS. How long a time does that lease run?

Secretary DANIELS. This man's lease runs only to 1916.

The CHAIRMAN. Which one is that?

Secretary DANIELS. That is the Pittsburgh man. Then he owns lands in California.

Mr. ROBERTS. I want to follow up the Indian Territory matter. Has that gentleman an option for a renewal of his lease?

Secretary DANIELS. His idea was that if we would make this contract the lease could be renewed.

Mr. ROBERTS. There is no certainty?

Secretary DANIELS. No.

Mr. ROBERTS. It would not be worth while to consider a lease which has only two years to run?

Secretary DANIELS. No.

The CHAIRMAN. That involved an outlay of about \$20,000,000.

Mr. FARR. Would we have the right, as a Government, to get a concession of oil lands in Mexico or any other country?

The CHAIRMAN. I do not think we ever did anything of that kind.

Mr. Secretary, I want to ask you if the name of that gentleman was W. J. Payne?

Secretary DANIELS. Yes.

The CHAIRMAN. You have a letter dated January 21, 1914, referring to that matter. Would you object to putting that letter in the hearings?

Secretary DANIELS. No.

(The letter referred to by the chairman follows:)

NATIONAL PETROLEUM CORPORATION,

Richmond, Va., January 21, 1914.

Hon. JOSEPHUS DANIELS,

Secretary of the Navy, Washington, D. C.

SIR: Referring to my conversation with you in regard to submitting you a proposal by which I would undertake to save the Navy Department a large amount of money in the purchase of its fuel oil, under certain conditions, I beg to say that I have given this proposition most careful consideration, and after a talk some time ago with Mr. Chairman Padgett, of your committee, I have decided to submit you the following proposal:

1. I own and control the oil rights in, on, and under certain oil lands in Mexico, aggregating between 50,000 and 60,000 acres, the leases of said oil rights covering periods of from 30 to 50 years, principally the latter.

I also own approximately 200 acres near the mouth of the Panuco River between Tampico and the Gulf, fronting on deep water, said property immediately adjoining the refinery and storage site of the Mexican Eagle Oil Co. (Lord Cowdray). This is one of the most valuable locations in that harbor for storage and shipping terminal. I have completed my first unit of storage on said property, consisting of one 55,000-barrel steel tank.

I have also under construction one of the most substantial and well-built loading piers on the Panuco River, and it is so designed that two steamers can load at a time. Our storage will be at this point, with pumping station, pipe lines, etc., connecting said storage with the dock for loading on ocean-going vessels. Within about 60 days we will be in position to begin furnishing oil from our terminal at the rate of 2,000,000 barrels annually, and about four months later would be prepared to furnish up to 4,000,000 barrels annually.

2. For the purpose of supplying the Navy Department with its fuel-oil requirements I would undertake to erect at the Government Naval Base, Guantanamo, on land to be furnished by the Government, or at such other point as may be mutually agreed upon, ten steel storage tanks, each with a capacity of 55,000 barrels. I would also erect at the same point a splitting or refining plant for the purpose of preparing the oil to conform to the specifications of the Navy Department. I will undertake to carry in storage at the above-stated storage plant at all times from 400,000 to 500,000 barrels of oil, subject to the fuel demands of the Navy Department.

3. I am in a position to furnish all the oil required by the Navy, but am not in a position to provide all of the necessary facilities for filling said contract. To enable me to provide said facilities the Navy Department is to advance me \$1,150,000, said amount to be advanced from time to time as the construction of the storage tanks, refining plant, and delivery of said oil in storage progresses. In consideration for said advances I agree to devote all of our resources and facilities, first, in keeping the department amply supplied with oil of a quality to comply with the department's specifications, and to furnish said oil at 15 cents less per barrel of 42 gallons than was paid under the last contract made by the department. With this reduction in price, if the consumption is 2,000,000 barrels per annum, the saving to the Navy Department will be about \$300,000 per annum. As the annual consumption will,

within a few years, no doubt be in excess of 4,000,000 barrels, you can readily see the great saving that this plant will bring to the Navy Department.

4. The security to be given for the advances to be made by the Navy Department would be as follows:

(a) The ten 55,000-barrel storage tanks, refining plant, pumping stations, pipe lines, and other improvements made at Guantanamo or elsewhere, as may be hereafter decided.

(b) The terminal and storage property, pier, pumping station, and pipe lines at Tampico, Mexico.

(c) Pipe line from Panuco to Tampico—about 30 miles in length—for delivering oil from the Panuco field to Tampico (not yet constructed, but will be and delivered also as security).

(d) One tank steamer, one ocean-going steel oil barge, one ocean-going tug, and all other floating equipment owned at the time conveyance of said security is made.

(e) All oil lands and oil leases, aggregating approximately 60,000 acres, which oil properties alone have a value in excess of \$1,000,000.

With the exception of \$150,000 required to complete payment for some additional oil properties, the entire amount furnished by the Navy Department would be spent in making improvements to the properties, all of which would be held as security for the money so advanced, including all other property owned or acquired by the company, as set out in sections (a), (b), (c), (d), and (e). After the completion of the improvements the value of the security held for the protection of the Navy Department in making the advance of \$1,150,000 would be in excess of \$3,000,000.

5. The duration of the contract I should say should be for a period of 5 years, and if for said period, 20 per cent of the loan would be repaid each year, so that at the end of 5 years the loan would be entirely repaid. At the expiration of said period of 5 years, if the contract should not be renewed with the Navy Department, I would want some reasonable and fair arrangement for the continuation of the use of the land on which the storage tanks and refinery are situated, should they be located on Government property at Guantanamo, at a fair rental for the land so occupied.

I might say that we shall have storage tanks at Colon, and we could also furnish the department oil at this point.

I believe that to have one company with such facilities as would be possessed by us, devoting its energies to supplying the Navy Department with fuel oil, could not but prove most satisfactory, and if the proposition appeals to you I will be pleased to call for the purpose of going into the matter further, or discussing it with your committee, should you so desire.

Yours, very truly,

W. J. PAYNE, *President.*

Secretary DANIELS. I do not think there would be any trouble about dealing with private citizens who own land elsewhere.

Mr. TALBOTT. You can contract for the delivery of the oil?

Secretary DANIELS. Of course.

The CHAIRMAN. Mr. Secretary, I will ask you if you have in your possession a report of the debate in the Commons of the statement of Mr. Churchill relative to the Mexican oil situation?

Secretary DANIELS. Yes; I have it.

The CHAIRMAN. Will you please place in the hearings a statement of what his proposition was?

Secretary DANIELS. I will be glad to do that.

EXTRACT FROM A STATEMENT IN PARLIAMENT BY THE FIRST LORD OF THE ADMIRALTY.
MR. WINSTON CHURCHILL.

* * * There are now built and building more than 100 destroyers—I purposely leave the number rather vague—including coastal destroyers, which are solely dependent upon oil fuel. Similarly, during the last five years, oil has been employed in coal-burning battleships and cruisers to enable them to realize their full powers in an emergency. At the time when I became responsible for the admiralty administration, in the autumn of 1911, there were more than 150 vessels built and building which were dependent wholly or partly on

oil. Provision had been made from year to year both for the storage of oil, for current expenditure, and for building up an oil-fuel reserve, which, of course, increases with the number of vessels added to the fleet and in proportion to the number added to the fleet.

* * * There is no doubt that with otherwise similar warships the one that burns oil possesses a large excess of speed over that which burns only coal, and even exhibits its superiority in this respect over that which burns coal and oil. The radius of action of a ship of war when using oil instead of coal is increased, I am informed, by at least 40 per cent for the same weight of fuel. Moreover, oil can be stowed in some places in a ship from which it would be quite impracticable to bring coal to the furnaces with the certainty of still further increasing the radius of action. Oil bunkers can be replenished with great rapidity and without interference with the fighting efficiency of the ship, and a few men suffice for the work. On the other hand, the operation of re-coaling is, as everyone acquainted with the navy knows, lengthy and laborious. It necessitates the exertions of the whole of the crew, with the result that the men are physically exhausted by the effort, and the ship is for a time rendered unfit to fight. The use of oil is also attended by the saving of a large amount of labor involved in coal trimming and stoking as well as in the removal of ashes, clinkers, and soot when coal is burned. This enables a very large reduction of stokehold personnel to be made.

Oil gives the very great advantage, as compared with coal, of admitting of a rapid increase of steam production, and enables variations of steam pressure due to the necessity for cleaning coal-burning furnaces to be eliminated. In a coal-burning ship, after part of the coal has been used, the ship can not attain her full power without throwing a great strain upon the personnel, who have to be brought from other stations to trim the coal from remote or inconveniently placed bunkers; whereas oil is delivered to the furnaces with continuous facility until the whole has been consumed. The use of oil as fuel instead of coal makes it possible in every type of war vessel to produce a ship which will fulfill given conditions of speed and armament upon lesser dimensions, and consequently at smaller cost, than could be done with coal. * * * All these advantages attendant upon the use of oil can be reaped by every other nation that chooses to employ it, but, as I explained last March, there is one great special advantage which oil confers upon the British fleet which would not be enjoyed by any weaker naval power—I mean the special advantage to the strongest navy of not being forced to leave its fighting position in order to refuel. It may be assumed that the weaker navy will hide its opportunity in port, while the stronger must keep the seas continuously. Re-coaling, therefore, imposes a continued strain on the stronger fleet without any corresponding deduction from the weaker. Oil which can be fed so easily from one vessel to another would, therefore, add an appreciable percentage to the relative fighting strength of the British Navy without any corresponding discounts in other directions.

I now come to the quantities of oil and the sources of oil which are at our disposal in the world, and here I hope no spirit of exaggeration will enter into the mind of anyone who approaches this question or in the mind of any of those who comment afterwards upon our discussions this afternoon. There is plenty of oil in the world. The total output of crude oil last year was nearly 50,000,000 tons. The total consumption of the navy last year—and this is the only figure I am going to give on this subject—I give it in order that a proper sense of proportion in this question should be established from the outset—the total consumption of the navy last year was less than 200,000 tons. We are, or soon shall be, able to draw oil from Burmah, California, Persia, Texas, Roumania, Borneo, Egypt, Mexico, and Trinidad. The prospects of further development or discoveries of natural oil fields are very extensive. The high prices now prevailing are calling from the world, from the great centers, a very remarkable response.

The problem is not one of quantity; it is one of price; and here we enter a field of operations full of intricate and novel features, in which a Government department will require, in a special degree, the confidence and support of the House if it is to make sure, thrifty, and judicious arrangements in the public interest. The first and greatest of all new features in the oil market in the last two years has been the great upward movement in prices. Oil which in 1911-12 could practically compete on favorable terms with coal has now almost doubled in cost. At the same time, owing to a temporary scarcity of oil transports, freights have risen by 60 or 70 per cent. The cause of this is the growing demand for oil fuel on account of its many advantages, and this demand,

coupled with that for petrol, has given rise to vast and formidable schemes on the part of the comparatively small number of wealthy combinations to control the oil market and raise and maintain prices. It must be admitted, however, that to a very large extent the causes which raise prices and create stringency are natural and automatic. Many private businesses, when they lay down an oil ship or build an oil engine, have been making long forward contracts for the supply of the necessary fuel to drive it. In certain cases companies selling engines sell with them guarantees to supply oil during some years of their anticipated lifetime of the engine. The consequence is that the oil market in future years is going to be greatly divided up and pegged out among different consumers, all of whom are taking steps to protect themselves against artificial manipulation, for which the present state of the market at the present time affords so promising a field. In other countries whose navies are adopting oil fuel similar measures have been or are about to be taken. We have ourselves taken certain steps to protect our interests with regard to colonial leases in oil-producing colonies of the British Empire. But, speaking generally, the British admiralty has so far adhered to the system of annual contracts, which is enjoined by our regular departmental practice, and so far we have found them quite satisfactory. So far, but no farther.

Hitherto we have been in a position to make our own terms. We have selected, with almost fastidious discrimination, exactly the kind of oil that suited us best, irrespective of whether it was particularly convenient to refiners to make it or not, and irrespective of whether it was particularly abundant or not. And we have bought it both for consumption and for reserve as we required it from year to year and from month to month, according to the strictest rules of financial correctitude in what might, without a stretch of imagination, be called "the open market." These days are done. The quantities of oil we shall require have increased beyond the modest limits which were filled by occasional purchases. The kind of oil we prefer is no longer the kind it suits refiners to make and which it pays them best to make. The open market is becoming an open mockery. Our stake in oil-burning ships is becoming so important that we must have the certainty of being able to buy a steady supply of oil at a steady price. Not to take proper steps in time would mean we should gradually, but rapidly, get into the position of being forced purchasers. We should be grossly overcharged. It does not mean we should not get oil. At a certain price it would pay nobody else but us to buy it. It does not mean we should not get the oil. Let that be dismissed from everyone's mind. It would mean, however, that we should be made to pay an excessive price for it.

I have unfolded only the general outline of the problem to the committee. What is our policy toward it? It is a twofold policy. There is an ultimate policy and there is an interim policy. Our ultimate policy is that the admiralty should become the independent owner and producer of its own supplies of liquid fuel, first, by building up an oil reserve in this country sufficient to make us safe in war and able to override price fluctuations in peace; secondly, by acquiring the power to deal in crude oils as they come cheaply into the market. When a new field is developed and those who are producing it have exhausted their original capital and have not yet opened up new lines of consumption and customers there are opportunities of purchasing large quantities of oil, if the means of storage and transportation are favorable, at prices which bear no relation to what the same can afterwards be sold at when the field is firmly established and when its customers and markets are clearly marked out. This second aspect of our ultimate policy involves the admiralty being able to retort, refine, top—top means driving lighter products off by evaporation—or distill crude oil of various kinds until it reaches the quality required for naval use. This again leads us into having to dispose of the surplus products—another great problem—but I do not myself see any reason why we should shrink, if necessary, from entering this field of State enterprise. * * * We already keep our great system of the dockyards in full activity in order to provide a check on private constructors, and I see no reason, nor do my advisers, why we should shrink from making this further extension of the vast and various businesses of the admiralty.

The third aspect of the ultimate policy is that we must become the owners or, at any rate, the controllers at the source, of at least a proportion of the supply of natural oil which we require. On all these lines we are advancing rapidly, and we are moving toward that position of independence outside the oil market which is our ultimate policy to secure, which we are quite strong

enough with the power of this country to secure against any combination, and which must be secured before any fundamental change is made in the main coal-burning basis of the fleet.

I come to the interim policy, which is required for the building up of the oil-fuel reserves and for the period while the complicated, administrative, scientific, and financial questions involved in the ultimate policy are being settled. The interim policy consists in making at once a series of forward contracts for about five years, with a certain power of renewal, to secure a regular and an adequate supply during this immediately future period at reasonable and steady prices. It is the need of concluding promptly this series of forward contracts now being prepared which is the principal and immediate reason which leads me to open this subject so fully to the committee to-day. I have one difficulty in presenting my case satisfactorily to the committee, and that is that this subject is highly confidential.

When you are carrying through a series of complex and delicate negotiations which may powerfully affect a market limited and controlled like the oil market, or when you are trying to hold a balance between various oil combinations, and preserve and develop independent sources of supply, you do not exactly want to go and tell everybody what you are doing beforehand.

The Admiralty consider it indispensable to the proper solution of the question of oil supply to make a contract for a portion—a comparatively small portion, but still a substantial portion—of our oil supply with the Mexican Eagle Co. That is the company directed by Lord Cowdray, with which Lord Murray is connected. It is also the greatest British controlled oil company in the world, and is one of the comparatively few great British oil companies in the world. The contract, I am advised by my officials who have been engaged in its detailed negotiation—and I can confirm it so far as my opinion is worth much upon these intricate questions—the contract, I am advised, is one that is extremely advantageous for the public and for the Navy. The Mexican supplies of oil are abundant, and can not be neglected by the Admiralty. They are a necessary feature in our interim arrangements. They come to us over an ocean route which we can easily and effectively control. My board are unanimously of opinion that we should be wrong if we were to allow ourselves to exclude this valuable source of supply from our general arrangements. No contract has been made hitherto. All rumors to that effect are absolutely false. Indeed, it is only within the past few months that the experiments have been completed—the experiments were made at Haslam—which have decided the Admiralty engineers that Mexican oil can safely and conveniently be used in our warships. This, as the noble lord and member for Portsmouth (Lord Charles Beresford) said some months ago, is an expert question, and it has been settled to the entire satisfaction of the expert engineers on whom we have reliance.

Nothing has been neglected so far. Storage has already been created on a great scale, not only in the United Kingdom, but at naval bases throughout the Empire, and the work of extending it and increasing it has proceeded with the utmost possible celerity. We have, without particularly advertising the fact, got built and building a fleet of 13 oil-transport steamers, some large for transport across the sea, others smaller for distribution to the fleets and flotillas, which will be ready before the end of 1914—that is to say—before the important vessels dependent upon oil come into the fleet. The carrying capacity of the five largest of these steamers is alone considerably greater than the whole quantity of oil which the navy consumed last year. Of course, we do not rely entirely upon Government steamers, but also upon hired freight to bring in our oil.

Mr. Lee. First, it is necessary that we should have, either in this country or at some accessible point in the Empire, a national supply, which shall be adequate for our needs, and not only accessible, but available at all times, or else we must establish a huge, elaborate, and protected system of storage, not only against ordinary risk, but against attack from overhead as well. I am glad to know that the Admiralty are proceeding on both those lines.

Lord Charles Beresford. Against all these advantages there are tremendous disadvantages at the moment. One is the question of the transport of oil to the stores in this country; that is, the transport of the oil from the source of origin to where we have to store it. The second is the question of storage, and the third is another question of transport, which is the delivery of the oil to where the fleet is; that is, from the storage to the ships. I think the

counterpoise of disadvantages at the present moment and for some time will kick the beam, and I think that being so we are placing ourselves in a very grave position with regard to this question of oil. I must blame the Admiralty for it. They designed these ships and laid them down before taking the ordinary business precaution of getting transports, from the source of origin, the necessary storage, and the transports for distribution.

Mr. FARR. Mr. Secretary, what increase in the price of oil has occurred within the past four or five years?

Secretary DANIELS. The price of oil in 1911 was $1\frac{1}{2}$ cents per gallon.

The CHAIRMAN. On the Pacific or Atlantic side?

Secretary DANIELS. On the Atlantic side. In 1912 the price was 3 cents, and in 1913 the price was $3\frac{1}{2}$ cents. The price has nearly doubled; it is about twice what it was in 1911, and the information is that it is still going up.

The CHAIRMAN. In the estimates you have submitted a recommendation for an appropriation of \$500,000 for fuel-oil tanks and other things at various places. I would be glad if you would put in the hearings a statement of the relative necessity and importance of those several items in the order in which they are needed, so that if all of them can not be cared for the more important and necissitous ones may be.

Secretary DANIELS. I will be glad to do so. Only the most necessary ones have been asked for. All are important. Fuel-oil stations, in order of relative importance: San Francisco, Cal.; Norfolk, Va.; Puget Sound, Wash.; San Diego, Cal.; Melville, R. I.

Mr. ROBERTS. This money, I take it, is required for oil tanks entirely?

Secretary DANIELS. Yes.

Mr. ROBERTS. And nothing is contemplated for coaling plants?

Secretary DANIELS. No.

The CHAIRMAN. There is an item of \$45,000 for San Diego.

Mr. ROBERTS, is there some other matter which you desire to speak about?

Secretary DANIELS. What matter had I better take up next?

The CHAIRMAN. I will ask you to take up the matter of the proposed contract with the Union Iron Works for the construction of a dock at Hunters Point, near San Francisco, Cal. You addressed a letter to me on the subject.

Secretary DANIELS. Yes.

The CHAIRMAN. We would like to hear your statement.

Secretary DANIELS. The former Secretary recommended that we enter into a contract with the Union Iron Works for that company to build a dock at Hunters Point that would accommodate the largest dreadnaught. They offered, if we would guarantee them for six years \$50,000 a year, not less than that, that they would build this dry dock at Hunters Point. The water there is very deep. We would have then on that coast a splendid dry dock. We recommend that that contract be entered into. I think it is very desirable, in the first place, because the Panama Canal will soon be open, and we will need south of Bremerton a dry dock large enough to take in the largest ship. We have none, and, instead of authorizing the construction of one, my idea is that it would be wiser to enter into this contract. We would save money by it, and besides, while we have small dry docks at Mare Island, the depth of water up to Mare Island now will not

permit our largest ships to go to that yard. At the last session of Congress a sum of money was appropriated to dredge the channel. This is being done, and it is expected when the work is finished that the channel will be deep enough to take in most of the ships; and if it should turn out that it is deep enough, then, of course, we will have our expansion at Mare Island where we have a large investment. If it should turn out that it is not, then we should have a dry dock in San Francisco Bay, and therefore I think it is desirable to make this contract with the private firm.

Mr. BRITTEN. How far is Hunters Point from the Mare Island Navy Yard?

Secretary DANIELS. About 29½ sea miles.

Mr. BRITTEN. There are advantages in having repairs made in the dry dock at Hunters Point?

Secretary DANIELS. Of course there are disadvantages. We have no navy yard, and we would have to send our men from Mare Island or make contract with private parties.

Mr. BRITTEN. Probably with the Union Iron Works?

Secretary DANIELS. Yes. That is only a single matter.

Mr. BRITTEN. The Union Iron Works has other dry docks?

Secretary DANIELS. Yes. In addition to that, the Union Iron Works has sufficient dry docks, and they would always guarantee to give us the preference for any of our ships.

The CHAIRMAN. At what price do they propose to do that?

Secretary DANIELS. It is the commercial price per ton.

Mr. ROBERTS. That is in excess of \$50,000 guaranty?

Secretary DANIELS. Oh, no.

The CHAIRMAN. No; we just agree to give them \$50,000 a year.

Mr. ROBERTS. Perhaps I do not make myself clear. We guarantee them \$50,000 a year worth of work, and we can take up that \$50,000 guaranty in dry docking?

The CHAIRMAN. At the commercial price.

Mr. ROBERTS. If we take in excess of \$50,000 a year, do they still give us the commercial price?

Secretary DANIELS. The commercial price; yes.

Mr. ROBERTS. And we have the priority just the same?

Secretary DANIELS. Just the same.

Another advantage of that is if at the end of six years later on we want to build our own dry dock in our yard, this dry dock would be there at all times, which the Government could use in an emergency.

Mr. BRITTEN. I do not know that I understand that commercial price. Is it the same price per ton for dockage as is charged to commercial ships? Is that the idea; that is, that it is a fixed price per ton for the number of days that our ship remains in the dock?

Secretary DANIELS. Yes.

Mr. BRITTEN. And all of those various charges put together must amount to at least \$50,000 a year?

Secretary DANIELS. Yes; and it may run over that.

Mr. BRITTEN. That is merely an insurance?

Secretary DANIELS. We would need it very early, and we need it now; as soon as the Panama Canal is finished we would need it very much.

Mr. BRITTEN. How long would it take the Union Iron Works to build that dock?

Secretary DANIELS. I think they guarantee to do it in two years, but they think if they get the contract soon they could do it earlier.

Mr. BRITTEN. Have you any figures, Mr. Secretary, as to how much that would cost?

Secretary DANIELS. They say they think they could build it for not less than \$2,000,000; possibly more. But they can build it cheaply there because of the conditions. They do not have to dredge. When they dig they are at the rock and have a good foundation.

Mr. ROBERTS. Have the directors of the port of Boston made any report on the guaranty for that dock?

Secretary DANIELS. I do not think so, Mr. Roberts?

Mr. ROBERTS. I understood that they were to approach the Navy Department and see if the department would not guarantee a certain amount. It was reported in the Boston press that they have guaranties from some of the steamship lines, and, as I understand, a sufficient guaranty to warrant them in going ahead and building docks, and it was contemplated that the Government would guarantee them so much.

Secretary DANIELS. Nothing about it was ever taken up.

The CHAIRMAN. I will state that I had the contract printed, with the hearing of Admiral Watt, as it is proposed; that is, the proposed contract with the Union Iron Works, and it is in the hearings of Admiral Watt.

Mr. Secretary, have you some other matters to present?

Secretary DANIELS. You will observe, gentlemen, that you made appropriations in the last year for certain marine barracks, and we have not expended the money. I thought it might be well for me to give the reasons.

The CHAIRMAN. The committee will be very glad to hear you, Mr. Secretary.

Secretary DANIELS. The last Congress appropriated \$100,000 to build the marine barracks in the Canal Zone, and \$148,000 to build marine barracks at Boston. Those contracts have not been awarded. The general board recommended quite a change in the policy as to where the marines should be stationed. We are carrying out that policy, and, instead of having the marines scattered in small companies in so many places, we are trying to get them together so that they can have more advanced base work and more drilling and more work in companies and larger bodies.

In the Canal Zone, as I understand it, the Army is to have quite a large force. It occurred to me that if we could save this \$548,000 at Boston and at the Canal Zone, it was wise not to expend it, particularly until after these marines were located according to the new plan of distribution.

Mr. ROBERTS. Mr. Secretary, so far as you are concerned, as the head of the Navy Department, the marines are now permanently withdrawn from the Isthmus?

Secretary DANIELS. I would not say permanently withdrawn, but they are withdrawn; yes; all of them.

Mr. ROBERTS. Is it contemplated to return to the Isthmus the body of marines who will make that a base?

Secretary DANIELS. I do not think so. I do not think they ought to be returned.

Mr. ROBERTS. That would be your explanation, then, for not building barracks?

Secretary DANIELS. Yes.

Mr. WILLIAMS. You started to explain, Mr. Secretary, your reason why you do not think you ought to maintain marines on the Isthmus.

Secretary DANIELS. The Army is to have a large force there, that is their plan, and I do not think it is necessary for the Navy likewise to have a large force of marines there. The same thing is true in the Philippines; we are withdrawing marines in the Philippines, and we are withdrawing them generally where there are large forces.

Mr. ROBERTS. Mr. Secretary, you have used the marines very extensively in the past for landing parties in all these Central American and West Indian countries, for maintaining law and order, and they have been very efficient in that work. Is it not desirable that they should be used in that same way in the future?

Secretary DANIELS. I will tell you what we did about that. We have at Pensacola a very large investment in buildings, but the yard has been closed there and no work has been done. The buildings are in an excellent state of preservation and cost a great deal of money, and so we have put marines at Pensacola, and we think that they can get to any place in the Caribbean or Gulf States quickly enough from there.

Mr. BRITTEN. How many marines can you care for at Pensacola, Mr. Secretary?

Secretary DANIELS. Our present plan is to have about 800 or 1,000 there. That is, we plan to keep that many there. We could care for more, however.

Mr. BRITTEN. Do the buildings require quite extensive alterations to care for the marines?

Secretary DANIELS. Not very extensive. Of course if we had more than a thousand they would not accommodate them without extensive alterations.

Mr. ROBERTS. Could you get the marines over to the Caribbean and Central American States from Pensacola as quickly as you could from the Canal Zone?

Secretary DANIELS. There would not be much difference.

Mr. ROBERTS. I suppose they would go up on the Pacific side?

Secretary DANIELS. My idea, Mr. Roberts, is to wait until the Panama Canal is opened and have over on the Pacific side toward the south another large body of marines.

Mr. ROBERTS. You speak of "toward the south"; you mean, I suppose, within the territorial limits of the United States?

Secretary DANIELS. Yes; certainly.

Mr. ROBERTS. How about San Domingo and Nicaragua?

Secretary DANIELS. If we have transports available, we can get them pretty quickly to Nicaragua, you see, but if we have to go to Haiti, San Domingo, and other near-by countries we can get them from Pensacola just as well. My idea is that the Army is to have, as I understand, a large body of men in Panama, and you are duplicating just exactly as you are in the Philippines, where the Army

has a large force, and where the Army does have a large force we do not need the marines.

Mr. ROBERTS. Does the Marine Corps use that site where they contemplate putting up these barracks?

Secretary DANIELS. My idea was that if we find we need to have marines later in Panama we would have them there as we have them in the navy yard in connection with dry docks and the navy-yard establishment.

Mr. ROBERTS. You have seen the site that was set apart for the marine barracks?

Secretary DANIELS. I have never been there.

Mr. ROBERTS. At Panama?

Secretary DANIELS. I have never been there.

Mr. ROBERTS. It is very advantageously arranged with regard to the dry-dock building. The purpose of my inquiry is to find out if we can still hold that site, so that in the future if we want to put marines down there we can have it.

Secretary DANIELS. I will look into that.

Mr. ROBERTS. It is the finest tract, unquestionably, on the whole Canal Zone, and it was set aside for the building of barracks for the Marine Corps.

Secretary DANIELS. Just at this time the Marine Corps is in a state of transition.

The CHAIRMAN. If you will permit me, just there, Mr. Roberts, I have here a report of the General Board with relation to the policy of distribution of the marines; also a memorandum showing the present location and distribution, and I will ask you, Mr. Secretary, to put it in as a part of your statement.

Secretary DANIELS. Yes; I will put that in the record.

(The papers referred to are as follows:)

The full scheme of distribution of marines as recommended by the General Board follows:

General Board's recommendations, duties of marines and their connection with advanced base outfits, November 13, 1913:

The logical employment of the existing strength of the Marine Corps reduces itself to providing for the most important war duties first, and then utilizing what remains of marine personnel to the best advantage for other duties.

The duties of the Marine Corps and their requirements as to personnel, in the order of their importance for the normal work of the corps, may be thus arranged:

- (a) Personnel for two fixed defense regiments for advanced base work.
- (b) The necessary detachments for duty afloat in capital ships.
- (c) The force required to guard property at naval stations, and that necessary for naval prisons, magazines, and the recruiting and other details required for the administration and working of the corps.
- (d) Guards temporarily required in disturbed localities, such as Managua and Peking.
- (e) When desirable for a particular emergency, detachments to be temporarily detailed in distant possessions of the United States, and special detachments for expeditionary purposes.
- (f) Two mobile regiments when the Marine Corps is placed with the Navy, on a war footing, to supplement the advanced base fixed defense regiments.

Each of these employments of personnel is briefly considered as follows:

(a) A fixed defense regiment of about 1,250 enlisted force is required now for the Atlantic coast. When the advanced base material is assembled at Mare Island, a similar regiment should be formed for the Pacific coast. Later, when there has been actual experience gained in advanced base work, it may be found desirable to increase slightly the strengths of these regiments. Especially

trained enlisted men of the Navy—electricians, gunners, machinists, etc.—may be used in specialties such as mines, torpedoes, searchlights, etc., until a sufficient number of marines becomes available.

(b) The marines perform useful work on board capital ships. They are necessary there because the authorized and available Navy personnel is not sufficient to replace them now, and there is no prospect, with the growing needs of the service, that it will be sufficient in the future. On the other hand, the marines are available. If it develops later that the marine personnel is not sufficient for strictly necessary details, the detachments on board ship may be slightly reduced. The training marines get at sea is essential preparation for their most important duty in the fixed defense regiments. This is especially true of the officers, and of the men to a less degree only. Cruising in capital ships, they are available also for immediate expeditionary work, and form the nucleus of all landing parties. In minor operations they entirely relieve the enlisted Navy personnel, which can less easily be spared for this duty. The case is different for smaller vessels, generally operating independently, which must depend largely upon their regular landing parties, made up from the ships' naval complements, for shore expeditions. The number of marines that can be carried is not sufficient to make a landing party. The absence of marines gives more space for berthing sailors; and it is in a small vessel that each man counts more for general ship work than in a capital ship. Sailors are better than marines for general ship's work. Therefore, marines should not be detailed for small ships if their services are required for more important duty elsewhere.

(c) It is well to have small detachments at naval stations to guard Government property. It is also desirable to have a trained force at the disposal of the commandant in emergencies, fire, riots, etc. For guarding property, if necessary, civilian watchmen may be employed. Since, however, small detachments are advisable for emergencies, and to make up expeditionary forces, the marines should continue to do this work, under the patrol system as recommended by the Major General Commandant. In view of the fact that existing navy yards will probably be continued in operation for some time, the General Board amends its former recommendation as follows: The detachments at Boston, New York, Philadelphia, Annapolis, Washington Navy Yard, Norfolk, Mare Island, and Bremerton, each a detachment of 105 enlisted men. At Portsmouth, N. H., Charleston, Key West, each 60 enlisted men. Total, 960 men.

For stations abroad: Pearl Harbor, Guam, Panama, and Guantanamo, each 105 men. Olongapo and Cavite, 150 men. Total, 570 men.

The Major General Commandant states 2,692 men are required for prisons, magazines, recruit depots, quartermasters' depots, marine band, etc. The total required for home and foreign stations and necessary administration, etc., is therefore 4,222.

(d) The legation guard at Peking can not be considered a permanent marine detail. With a pacified China under strong central control, no guard may be necessary. Then, again, in an emergency the number there may be greatly augmented. Under present conditions, and strictly as a temporary expedient, it is doubtless wise to cooperate with other powers and continue a guard for the protection of American life and property. Service in this guard also constitutes, educationally, a valuable experience for the Marine Corps, because of the cooperative work with foreign troops. If the men are available, a guard may therefore be retained until it can be safely withdrawn. What should be the strength of this detachment? The present details of troops at Peking and their character are about as follows:

British	350 officers and men (fixed), royal army.
French	400 officers and men, colonial troops.
Japanese	400 officers and men (variable), army.
American	320 officers and men (variable), marines.
Russian	200 officers and men (variable), army.
German	200 officers and men (variable), army.
Italian	250 officers and men (variable), navy.
Austrian	90 officers and men (variable), navy.
Belgian	40 officers and men (variable), army.
Netherlands	30 officers and men (variable), navy.

Of the 10 nations represented, only 3 have larger guards than the United States. Six have soldiers; 3 have sailors; and the United States only has marines. Following foreign practice, the American guard can consist of either

soldiers or sailors, if marines are required for other and more important strictly naval service, and either soldiers or sailors are more available.

The United States maintains one regiment of Infantry, about 1,200 men, at Tientsin, 90 miles from Peking, out of about 8,000 foreign troops held at Tientsin for emergency service.

In view of the above facts, the general board considers that a normal detail of one company at Peking is sufficient, especially as there will be, if the duty of the corps is rearranged, a surplus over normal requirements which can be used to meet emergency requirements. In addition, the Asiatic Fleet can always in an emergency, spare an additional company for the legation (there is one there now); and a battalion or so of sailors if necessary. Moreover, the legations can always draw upon the large bodies of foreign troops maintained at Tientsin.

The surplus will also provide for emergency details, such as that at Managua.

(e). A plausible argument from the standpoint of possible convenience can be made for large detachments of marines located permanently in United States distant possessions. It is questionable if a consistent argument can be made, based upon necessity, for such details. We have had, since the Spanish War, marine personnel available and such details were justified, since only 20 per cent of the corps was employed afloat and employment had to be found for the remaining 80 per cent. But a new and paramount need has arisen (that for an advanced base), and this calls for one of two things—a redistribution of duties and an elimination of those unnecessary, or an increase in the corps. Both economy and good administration require a utilization of all resources without waste; and the question of redistribution of duties should, therefore, be attempted first, eliminating detachments that are maintained merely because they are a convenience and are desirable in favor of those that changed conditions make necessary.

There is no question that the maintenance of a force of marines on the Isthmus has been a convenience; and has even been necessary in view of the absence of an Army garrison. The presence of the detachment has been a guaranty of the safety of life and property on the Isthmus during the construction of the canal. They have also, incidentally, been available on several occasions for expeditionary work. The Army garrison for the Canal Zone will, however, consist of eight or ten thousand men. With this force present, there is no need for a few hundred marines. All the guard required will be that necessary to care for naval property in the Canal Zone.

In war with a first-class power, all marines will be required for the war and no expeditionary force can be kept on the Isthmus with a view to police duty in Central America.

At such times also marines and seamen could not be landed from fighting ships for this purpose. So far as such duty in normal peace times is concerned, if marines are to work in conjunction with the Navy, the advantages of having a large body on the Isthmus for expeditionary work are more apparent than real. Marines do not move from the Isthmus until action is inaugurated by either the Atlantic or Pacific Fleet. The fighting ships are always on the spot first; and the Atlantic Fleet has a thousand marines, and the Pacific Fleet three or four hundred, besides seaman organized and drilled for such service. No time is lost, because transports are not maintained at Panama; the marines have to be taken by vessels of the fleet from Panama, or by transports dispatched from continental United States ports, say, Philadelphia or San Francisco. Time may actually be saved, therefore, in getting marines to a disturbed locality, as they may be taken at once from their bases at Philadelphia and Mare Island, instead of having to be picked up at Panama after a long detour.

It must be remembered that the above procedure obtained with success up to the Spanish War. There was no expeditionary force outside the United States. The Atlantic and Pacific Fleets first attended with their marine and Navy personnel to the calls for landing parties. If more force was required, it was dispatched in transports from home ports. The recent Nicaragua expedition is a case in point. The collier *Justin* was fortunately at Corinto. She proceeded to Panama and returned with the first battalion of marines. After the *California* and other ships had arrived at Corinto from San Diego and had landed 500 men, the *California* proceeded to Panama and brought back a second battalion of marines. This took six days. That the *Justin* was at Corinto and available for transport duty was purely fortuitous. If the fixed defense regiment had been stationed at Mare Island or San Diego, the marine detachment could have been taken on board at once and landed in Corinto possibly four or five days in advance of the arrival of the battalion from Panama.

The same arguments apply to the force at present maintained in the Philippines. The Army and constabulary now handle all outbreaks in the islands. For those in China, 600 to 1,000 miles away, there are 8,000 foreign troops, including one regiment, 1,200 strong, of United States Infantry, at Tientsin, and over 2,000 foreign soldiers and sailors at Peking.

There appears no reason for the retention of a detachment at Pearl Harbor larger than is sufficient to protect property.

The situation, therefore, sums up to the General Board about as follows:

Required—	Men.
(a) Personnel, 2 fixed advance-base regiments.....	2,500
(b) Detachments for capital ships.....	2,000
(c) To guard property at naval stations at home and in outlying possessions.....	1,530
(d) For naval prisons and magazines and recruiting and other duties required for the administration and working of the Marine Corps (headquarters estimate).....	2,692
(e) Legation guard, Peking.....	105
	<hr/> 8,827
Authorized strength.....	9,921
	<hr/> 1,094

This leaves 1,094 men for temporary and emergency requirements, such as the detachment at Managua, increases in the Peking guard, temporary detachments in distant United States territory when conditions make them advisable, an increase in the garrison in Guam when guns are installed, increases to navy-yard details, etc. Expeditionary forces, as in the past, are to be drawn from marines afloat, navy-yard and other detachments, and also from the fixed-defense regiments when at their bases. The General Board considers this service will be beneficial for these regiments. When at their home bases, about eight months of the year, the equipment, except mines, signals, and light guns, can not be used efficiently, and the force normally keeps this equipment in condition for service. This may be done by less than the entire regiment.

All detachments must carry their own shortages—sick, absent, corps not recruited up to full strength, etc.—as the ships' complements of the Navy do. Each battleship of the Atlantic Fleet is, normally, about 80 short of complement from above causes.

(f) The two mobile defense regiments, about 1,250 men each, may be required in war to reinforce the fixed-defense regiments, one on each coast. They can not be provided and maintained as mobile-defense regiments in peace with the present authorized strength of the Marine Corps. Such organizations in peace are desirable, but not strictly necessary. An expansion of the Marine Corps to perform all its duties in war must come with the expansion of the present personnel of the Navy to about double its strength to meet war requirements against a first-class naval power. In the meantime, for peace training, whenever advanced-base exercises are held in conjunction with the fleet, the marines of the ships present, or seaman, or both, can act as a mobile regiment to reinforce the defense.

As to Guam: When the additional guns are mounted enough extra marines should be added to the garrison to care for the equipment and drill with a fraction of it. The Coast Artillery never has, in time of peace, a garrison anywhere to man all the guns to war strength.

THE STRENGTH OF THE FIXED-DEFENSE REGIMENTS.

Considering the service to be performed, that the advanced base is necessarily established on the coast, and that land transportation for heavy guns can never be a matter of more than a few miles, the marine headquarters estimates for personnel appear large. They are evidently based upon those required for a field-army organization, when provision must be made for long marches over difficult country. The General Board approaches an analysis of this question with some hesitancy, as no one has had in our service actual experience with advanced-base problems under the conditions which will obtain in future.

The organization, as far as the permanently mounted guns, the 8-5''-51 cal., and the 16-3'' 50 cal., are concerned, rather approaches that required by the

Coast Artillery for similar guns and mounts. For, while transportation and their emplacement is in progress, the regular service of the guns on a coast-artillery basis is not necessary. The same personnel perform both duties at different times.

So far as the mobile guns are concerned, the 8-3" 50-cal. guns with carriage mounts, although the distances to be covered are not so great, the required mobility points to the adoption of modified Army requirements for field service.

As for the requirement of 320 men for 8-3" L. G., this appears excessive. The enlisted personnel for these guns is 27 men by the Navy Drill Book, and the service to be performed in the neighborhood of the advanced base is precisely the same as in the landing operations for which this complement was established, even considering the service of the limber. Moreover, these eight guns more properly belong to the mobile regiments, and it is not really necessary to consider them in fixed-defense regiment requirements if a shortage of marine personnel is developed.

According to the United States Army "Manning tables which were used as basis for personnel required for insular and canal ports, July 8, 1912," the following allowances now obtain:

1 battery, 4-8" guns; "grand total enlisted force," 98 men and 2 officers.

1 battery, 4-8" guns; "grand total enlisted force," 70 men and 2 officers.

War Department General Order No. 48, July 22, 1913, provides that a 3" light mountain battery, or 3.8 howitzer battery, or a 4.7 howitzer battery, shall have an enlisted personnel of 183 men. This includes mechanics, horseholders, and personnel to care for 32 saddle horses, 96 draft horses, and 8 mules, with 3 field wagons for each battery of four guns. These would not be required in an advance base outfit. "The United States horse artillery organization, war strength," gives 171 men to a battery of 4 guns; but this also includes personnel to handle and care for 244 animals and 28 wagons and carriages; or for 8 guns, a total of 488 animals, and 46 wagons and carriages. Obviously no such number will be with 8-3" guns of an advanced base outfit, and therefore 183 men per battery of 4 guns may be safely accepted as a war requirement, at least in preliminary peace work.

The estimates for mine, engineer, and signal companies also appear large for the organization. One marine company of 105 men should suffice for each, at least until experience has proved the necessity for more.

In about 1903, when the force and guns necessary to defend Port Mochima, Venezuela, was under consideration, according to Maj. Haines, United States Marine Corps (field work, p. 27), the number of men actually required to man the guns was as follows:

	Total.
9-5" R. F. guns, 18 men each.....	162
4-6 pdrs. 8 men each.....	32
6-3" H. P. field pieces, 11 men each.....	66

Total to man all guns with two reliefs..... 260.

In order to have an efficient Infantry support and to allow for those who may be on special details, on the sick list, for cooks, prisoners, working parties, etc., it is thought two battallions of four full companies each would be the least number required.

The above considerations applied to the proposed advanced base armament result, as follows:

Guns.		Batteries.		
Num-ber.	Type.	Num-ber.	Men to each.	Total.
9	5-Inch 51-cal. R. F.....	2	98	196
16	3-Inch 50-cal. S. A.....	4	70	280
8	3-Inch 50-cal. S. A. carriage mount.....	2	183	366
8	3-Inch L. G.....	2	108	216
1	Mine company.....			105
1	Signal company.....			105
1	Engineer company.....			105
	Regiment and battery headquarters.....			25
				1,296

This total includes eight 3'' L. G.'s which should come with the mobile regiments, to be provided for when the Marine Corps is on a war footing. The 216 men thus released can be used as otherwise desired.

The general board therefore believes that a fixed defense regiment of about 1,250 men will be able to adequately handle the advanced base equipment so far recommended. In war this number can be increased with the increase of the corps. The number given can be provided for by a redistribution of duties. If experience proves more personnel should be provided, several hundred men may be obtained by reducing each capital ship complement to one company of 48 men and 6 noncommissioned officers instead of 60 to 80 as are now carried.

Before an increase in the corps is contemplated, it is the sense of the General Board than both the Navy and Marine Corps should cooperate to perform the advanced base work now in prospect with the personnel that can be spared from the Navy, if necessary, and from the Marine Corps when it is once more engaged in strictly naval duties.

GEORGE DEWEY.

PRESENT DISTRIBUTION OF MARINES.

The following table shows the present distribution of the enlisted force of the Marine Corps. Data obtained from major general commandant's office. Orders have been issued to withdraw 370 men from Panama. These men are probably with the squadron in Mexican waters by this time. The remainder (about 25 men) will remain at Camp Elliott, Panama, only until Government property has been prepared for shipment, when they also will be withdrawn. Orders have also been issued to transfer 278 men from the Philippines to Guam. These men are probably en route now.

ADVANCE BASE REGIMENTS.

	Totals.
First Regiment (<i>Hancock</i>), enlisted men-----	849
Second Regiment (<i>Prairie</i>), enlisted men-----	815
	<hr/> 1, 664

Foreign station.

Nicaragua, enlisted men-----	98
Guam, enlisted men-----	102
Guantanamo, enlisted men-----	109
Honolulu, enlisted men-----	185
Panama, enlisted men-----	393
Peking, enlisted men-----	229
Philippines, enlisted men-----	853
	<hr/> 1, 969

While the present strength at Honolulu is 185 enlisted men, it will soon be decreased to 105 by the transfer to the United States of the men whose enlistments are about to expire.

While the strength at Panama is shown above to be 393, this post has been abandoned. About 370 of the enlisted men are now in the Atlantic Fleet off Mexico.

The strength in the Philippines is shown to be 853. This includes 278 men now en route to Guam, and orders have been issued that in the near future will reduce the number of marines in the Philippines to 150.

Receiving ships.

At New York, enlisted men-----	100
At Puget Sound, enlisted men-----	100
At Mare Island, enlisted men-----	46
At San Francisco, enlisted men-----	30
At Portsmouth (<i>Southery</i>), enlisted men-----	96
	<hr/> 372
On recruiting duty-----	154

At naval magazines:

Dover, N. J., enlisted men	18
Hingham, Mass., enlisted men	25
Indianhead, Md., enlisted men	19
Rona Island, N. Y., enlisted men	21
	81
On cruising vessels	2,140

At naval prisons and disciplinary barracks:

Naval prison, Boston, Mass., enlisted men	101
Naval prison, Portsmouth, N. H., enlisted men	149
Disciplinary barracks, Port Royal, enlisted men	172
Disciplinary barracks, Puget Sound, enlisted men	109

	581
Hospital, Las Animas, Colo.	60

At all other stations in United States:

Annapolis, enlisted men	120
Boston, Mass., enlisted men	108
Charleston, S. C., enlisted men	56
Key West, Fla., enlisted men	24
Mare Island, Cal., enlisted men	708
Navy yard, D. C., enlisted men	108
New London, Conn., enlisted men	4
New York, N. Y., enlisted men	126
Norfolk, Va., enlisted men	915
Philadelphia, Pa., enlisted men	148
Portsmouth, N. H., enlisted men	60
Puget Sound, Wash., enlisted men	254
Washington, D. C., enlisted men	87
Washington, D. C. (appr.), enlisted men	65
Washington, D. C. (band), enlisted men	62
Winthrop, enlisted men	53

2,901

Total in service	9,872
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The enlisted strength of the marine barracks, Mare Island, Cal., is 708, distributed as follows:

Recruits under instruction	185
On duty with recruits	63
In hospital from post, ships, and Asiatic Station	24
Duty at naval prison	100
Available for yard duty, including two advance base companies	344

Total	708
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At the marine barracks, New York, with a strength of 126, the distribution is as follows:

Sick in hospital from post and ships	15
Available	111

Total	126
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At the marine barracks, Norfolk, with total strength of 915, the distribution is:

Recruits under instruction	516
On duty with recruits	175
Sick in hospital from post and ships	52
Available	152

Total	915
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At Puget Sound (WASH.) barracks the distribution of the total strength of 254 is as follows:

Sick in hospital from post and ships.....	9
Available for yard duty, including two advance base companies.....	245
Total.....	254

At marine barracks, Philadelphia, with a total strength of 148, the distribution is:

Sick in hospital from post, ships, and advance base regiment.....	33
Available.....	115
Total.....	148

To maintain at all times the total enlisted strength of the Marine Corps at 9,921, which is the number authorized by law, it is necessary to keep under instruction at the recruit depots at Norfolk and Mare Island from 750 to 1,000 men.

Mr. ROBERTS. I want to ask you, Mr. Secretary, what about the situation at Boston, what it will be?

Secretary DANIELS. My idea is to reduce the number of marines at the navy yards and we will have 105.

Mr. ROBERTS. That will be what you call the permanent force?

Secretary DANIELS. Yes; just to guard the place and be watchmen and do anything of that sort.

Mr. ROBERTS. You have a prison there that requires quite a force of marines to care for.

Secretary DANIELS. Well, our theory is that we have been having too many marines on guard duty, and we think we can get along with fewer and have more for regular service.

Mr. ROBERTS. There will be times when you will want many more marines than 105 at Boston.

Secretary DANIELS. If there comes such a time we can increase the force.

Mr. ROBERTS. I am getting at their quarters.

Secretary DANIELS. What do you say?

Mr. ROBERTS. I am getting at the question of quarters to provide for more than the 105 men you contemplate stationing there permanently.

Secretary DANIELS. We have this theory, that by using the patrol system a great many marines can be made available for duty elsewhere than in the yards. This is a transition period, going on the general theory we are following out. Of course, if it does not work well it does not have to stand, but I thought it was best to hold up the Boston marine quarters and those at the Canal Zone until we had determined fully whether this plan will work out.

Mr. ROBERTS. Do you think these quarters in Boston are adequate to care for 105 men, or any number of men, properly?

Secretary DANIELS. I am so advised.

Mr. ROBERTS. Our testimony has been that the Marine Barracks were insanitary and inadequate and unfit to keep the men. The portion that has been used by the officers has been condemned.

Secretary DANIELS. As a matter of fact, we are now considering making important changes in the matter of naval prisons and punishments, and I think we are going to be able to reduce the prison cost. You know the prison cost is something fearful. We are spending now somewhere near \$1,300,000 on prisoners and the men guarding

them. We have about 1,000 marines used for guarding prisoners. The expense of the present prison system and the long punishments for men who desert, and the theory that we have to punish them a long time to keep men in the service, I think is one of the things that needs great change and reform.

Mr. ROBERTS. Do you contemplate removing prisons from Boston?

Secretary DANIELS. I am contemplating trying to work out a system by which we will have fewer men in the prison.

Mr. ROBERTS. But still keeping the prison in the yard?

Secretary DANIELS. As long as we need the prison.

Mr. ROBERTS. I wish you would get some scheme to take it out of there.

Secretary DANIELS. I really think that we ought to do away with most of our prisons.

Mr. ROBERTS. If you keep the prison there, you ought to change your method of handling it.

Secretary DANIELS. I think that is one of the most important things we are doing, and I will say this, although it does not come strictly in the line of the hearing, I am now having what I might call a referendum; I am writing letters to every captain and every admiral in the Navy, asking them about half a dozen questions about the prisons and how to punish men; what should be done with a man who overstays his leave. Now, you know, if a man overstays his leave for a little while, it is desertion, and he is sent to jail for two years. It does not reform him. We are simply filling our prisons. It is an antiquated system.

Mr. HENSLEY. Mr. Secretary, let me say right in that connection, when I was around this last fall, visiting the prisons, I saw mere youths, not over the age of 16 years, in those prisons; it was making confirmed criminals of them.

Secretary DANIELS. That is a barbarous thing to do.

Mr. HENSLEY. It is outrageous.

Secretary DANIELS. I want to stop it.

The CHAIRMAN. I want to say that that impressed the committee very much, and some of the officers have spoken of it before, and it meets the approval of the committee very much to have the prison system have some humanity in it and more of the idea of reformation instead of the idea of punishment.

Mr. ROBERTS. Particularly does that apply to the prison at Portsmouth. I believe the system adopted there is absolutely brutal.

Secretary DANIELS. It is worse than brutal.

Mr. ROBERTS. It is calculated to make confirmed criminals of the inmates sent there.

Secretary DANIELS. We have a system now by which a man will be sent to prison for two years for desertion. I found the other day a man had been kept there for four years for some infractions of the prison rules. And we have prisoners at Concord. For desertion I do not believe we ought to have such long punishments; that is a question I would like to have you gentlemen think about. It has been suggested that we abolish all of the prisons, that we turn out everybody who is in there for mere desertion who have not committed any crime in the sense of stealing or any low crimes. I mean mere boys. It is suggested that we make a new rule to this effect, instead of saying, "You hold men in the Navy because they are

afraid to leave unless they go to jail," we say to any man that comes in the Navy, "If you willfully absent yourself without leave for 48 hours you are discharged for bad conduct—discharged."

Mr. HENSLEY. Mr. Secretary, I have a young man from my district who is in the Navy, and his mother has been ill for a number of years, and she is writing that boy and just stirring him to the very depths, pleading to him to come home, and he can not get out of the Navy. They are unable to pay the price that they require for his release, and I have been down here to see about it, and I can not get that boy discharged. I say I believe in observing the rules and laws in every respect, but I think when a man's mother appeals to him in that way it would almost make a man break any sort of regulation or law to get home to her.

The CHAIRMAN. We can not finish to-day it appears. Mr. Secretary, we will ask you to join us again Monday morning at 10.30.

Mr. HENSLEY. Before anyone goes out, Mr. Chairman, I think it would save time, and I have a list of some questions concerning the management down here in the navy yard, as to whether or not the system employed down there approaches what is known as the Taylor system.

The CHAIRMAN. Hand them to the Secretary, and he will take them up Monday.

Mr. HENSLEY. I thought perhaps we could expedite matters by allowing him to look over these questions, and then submit answers. and it would save time.

(The committee adjourned to 10.30 o'clock a. m. Monday, February 2, 1914.)

COMMITTEE ON NAVAL AFFAIRS,
Monday, February 2, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE
NAVY—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning the Secretary of the Navy.

Mr. ROBERTS. Just as we adjourned the other day I was asking the Secretary about the appropriation for barracks and quarters in the Boston Navy Yard, and I would like to finish on that line before taking up anything else.

The CHAIRMAN. Proceed, Mr. Roberts.

Mr. ROBERTS. As I understand, Mr. Secretary, the plan is to reduce the number of marines in the navy yards, including the Boston yard, but that there will be some marines left in that yard?

Secretary DANIELS. That is the present intention. One hundred and five is the recommendation.

Mr. ROBERTS. They will, of course, be quartered in barracks here, and I want to ask whether you consider the present quarters suitable for quartering troops?

Secretary DANIELS. I should think, for the small number of marines that we have there, they would be adequate, but I have not looked into that carefully.

Mr. ROBERTS. But if the barracks are insanitary, they are just as insanitary for a hundred as a thousand, and that is the condition, as shown by every report in regard to the barracks there. When the committee were there last summer we were shown quarters that had formerly been occupied by the officers and that had been condemned and abandoned, quarters, as the Secretary may recall, in a part of the barrack building. The officers must be quartered somewhere, and what provision will be made for the officers who will accompany the 105 marines?

Secretary DANIELS. You need very few officers for 105 marines. My idea was that we should hold the matter up until we had really withdrawn all except 105, and then see what was necessary.

Mr. ROBERTS. If I understand the plan as outlined by one of the chiefs of bureau or some one before us, it does not contemplate the permanent withdrawal or reduction of the number of marines at the different yards and stations, and there will be times, considerable periods, when there will be many more than what might be called the permanent guard quartered at these places?

Secretary DANIELS. I do not see why we should have more than 105 marines at Boston, or at any of the yards.

Mr. ROBERTS. As I understand the plan as detailed, it involves the appointment of guards?

Secretary DANIELS. Indeed, if we had the appropriation, it would be cheaper to have guards at the yards than marines.

Mr. ROBERTS. To have civilians, what they call watchmen?

Secretary DANIELS. Yes. If we had watchmen at some places, but we have no idea of doing that yet. I would not like to spend money on expecting more than 105 until we have worked out more fully the new plan.

Mr. ROBERTS. That leads me to ask you this question: If you have any objection to a reappropriation of the \$400,000 for barracks at Panama and the \$148,000 for barracks and quarters at Boston for some other naval purpose?

Secretary DANIELS. No, indeed. I wished to save that money so that we can use it for some purpose more needed.

Mr. ROBERTS. You would not object to a reappropriation?

Secretary DANIELS. I should much prefer that the money be appropriated for use at Boston for manufacturing, so that we could do better work there.

Mr. ROBERT. For ways and cranes?

Secretary DANIELS. Yes; I should much prefer that. I think that use of the money would be very wise.

Mr. ROBERTS. In the event that the Boston yard should be approved for the construction of a supply ship, will you send to the committee a communication recommending the reappropriation of the money for ways and cranes and for such other appliances as might be needed to build that ship?

Secretary DANIELS. I would recommend that the money appropriated for Boston for the marine barracks be utilized there for ways, cranes, and such use as would make it a better building place. As to Panama, I should say that the wisest thing we could do this year would be to let the money go back into the Treasury or authorize its use for some pressing need and wait until next December to see what would be best next year.

Mr. ROBERTS. There is a thing, perhaps, which you do not appreciate as much as we in the committee do. The \$400,000 for barracks last year figured in the total of the naval appropriations bill of that year, and whatever we appropriate this year will figure in the total of the bill if we make a new and direct appropriation, but if we reappropriate it does not affect the total of the bill. It might be advisable to reappropriate money which had not been expended?

Secretary DANIELS. I will make that recommendation in a letter. I have put in the hearing the present distribution of marines under the new plan.

The CHAIRMAN. Certainly.

The CHAIRMAN. Mr. Secretary, if you have some other subject which you desire to take up, you may proceed.

Secretary DANIELS. In line with the oil discussion, I would like to recommend an appropriation of at least \$500,000 for the securing of oil lands, if we can secure them. I think it would be a great mistake to wait until next year. We are considering plans to begin the acquiring of these lands. Already British capitalists have secured one-quarter of the oil lands in California. They have large holdings in Oklahoma, and I think we ought to have enough money to lease the oil lands.

The CHAIRMAN. In that connection, Mr. Secretary, should the \$400,000 which has been heretofore appropriated for Panama barracks be reappropriated for oil?

Secretary DANIELS. I would advise that all the money saved from barracks and hospitals, which amounts to between \$500,000 and \$600,000, be appropriated for the oil lands, and the Boston money be appropriated for the Boston yard.

Mr. ROBERTS. Has there been a hospital appropriation which has not been expended.

Secretary DANIELS. Yes. We had a hospital authorized at Pearl Harbor, the cost not to exceed \$300,000. Of this amount \$175,000 has been appropriated. We secured a contract to build an adequate one for \$129,706.29.

Mr. ROBERTS. Was the \$250,000 in excess of the \$11,000,000 that was originally contemplated for the building project?

The CHAIRMAN. It was a part of it.

Mr. ROBERTS. That might raise a question very properly of what effect it would have on the \$11,000,000.

The CHAIRMAN. Was the whole \$250,000 appropriated, or only a part of it.

Secretary DANIELS. \$175,000 was appropriated. I had observed that we had been building hospitals entirely too large and putting too much money in them, and when we came to the drawing of the contract we found that we could build a hospital there that would be adequate for any emergencies for \$129,706.29.

The CHAIRMAN. Will you please incorporate a specific statement of the items in the hearing, and then the committee can consider them?

Secretary DANIELS. The following is a list of savings on projects for which money has been appropriated, but which have been disapproved by the department. It is recommended that the money saved in Boston be reappropriated for the Boston yard. It is fur-

ther recommended that the remainder, amounting to \$470,000 be reappropriated to be used in the discretion of the Secretary for procuring oil lands or making oil contracts for a term of years.

Boston, Mass.:

The act of March 4, 1913, provided \$100,000 for "marine barracks" and \$48,000 for "officers' quarters," and it was proposed to proceed with these projects. In accordance with oral instructions of the Secretary, June 25, 1913, work on plans and specifications was suspended. Amount involved-----

\$148, 000

Portsmouth, N. H.:

The act of March 4, 1913, provided \$20,000 for "central administration building." It was proposed to improve and fit building No. 86 for this purpose but the department decided not to undertake the conversion of building No. 86 into a central office on account of excessive cost of the proposed change. (Letter of Oct. 25, 1913.) Saving-----

20, 000

Newport, R. I.:

The act of March 4, 1913, provided \$40,000 for purchase of land and extension of landing facilities in Newport. It was proposed to purchase and improve certain water-front property. On July 23, 1913, the department stated it "does not desire to take any further steps at the present time toward the purchase * * *." Amount involved-----

40, 000

Canal Zone:

The act of March 4, 1913, provided \$400,000 for the erection of barracks, quarters, and other buildings for accommodation of marines. It was proposed to proceed immediately with this project. On July 9, 1913, the department advised the Bureau of Yards and Docks that this entire matter is to be held in abeyance for the present. Amount involved-----

400, 000

Newport, R. I.:

The act of March 4, 1913, provided \$10,000 for "extension of wharf" at coal depot, Melville, R. I. It was proposed to provide additional berthing space for torpedo boats receiving oil fuel, but it appears unnecessary at this time. The Bureau of Yards and Docks recommended returning appropriation to the Treasury, but the department stated this would not be done at present. Amount involved-----

10, 000

Total-----

618, 000

Secretary DANIELS. Yes.

Mr. BROWNING. If the \$500,000 which you speak of were appropriated for oil lands, could you use it in case you wanted to make a contract with private individuals such as you have outlined and such as has been submitted?

Secretary DANIELS. I would like to have it so that we could use it for any purpose that would give us cheaper oil.

Mr. BROWNING. I think if the \$500,000 should not be specifically designated as for the purchase of oil lands it could be used for the purpose of making a contract with some people, which you say you have an idea can be done?

Secretary DANIELS. I would prefer that. The wording should allow purchase, leasing, or contract.

Mr. ROBERTS. That brings up a question which I would like to ask the Secretary. Have you in mind going into a partnership with individuals, because that is what it involves, according to your statement, if I understand you?

Secretary DANIELS. I will say that I have not in mind any specific thing, except I think that we should take steps to try to secure oil cheaper than we are securing it, and it will probably be higher pretty soon.

Mr. ROBERTS. I think the committee will heartily agree with that, but we might differ as to how that should be brought about. In other words, I question somewhat if Congress would desire the Government to enter into any partnership with a man who had some oil lands which involved the Government building the plant, furnishing the actual capital to develop it.

Secretary DANIELS. Suppose we were up to the proposition that we could do that and save a great deal of money, ought we not to do it?

Mr. ROBERTS. My personal view, Mr. Secretary, would be that we ought to buy them out entirely and do it ourselves rather than to have any sort of a partnership arrangement.

Mr. TALBOTT. Suppose you go to Mexico; this Government can not buy lands in Mexico, but private individuals or corporations could own the lands, and we could contract with them to furnish so many thousand barrels of oil.

Mr. ROBERTS. Why can we not get an oil concession just the same as a concession for a naval base?

Secretary DANIELS. The people who own the oil lands are not disposed to sell them and there is a great scramble for the oil lands. Now, if temporarily we could secure from some man who owns such lands, but who has not the money himself to do all the developing, a guaranty that if we put in some money to enable him to build oil tanks, etc., that he would furnish us the oil for a number of years at 30 or 40 per cent cheaper than we could buy it, would it not be wise to do that?

Mr. ROBERTS. I a case like that, if the Government were to enter into a contract to take a certain quantity of oil for a certain number of years, almost anybody could find private capitalists to furnish the money for development.

Secretary DANIELS. But if we say that we will take it at a certain price and we have a fixed price for 10 years, it will be much cheaper.

Mr. ROBERTS. The surplus oil could be sold at the market?

Secretary DANIELS. Yes.

The CHAIRMAN. You have no authority to contract for oil beyond the fiscal year?

Secretary DANIELS. No; unless we are given authority. Therefore we are paying a very high price. England is purchasing lands and securing concessions and making contracts. They have appropriated £3,304,000 for the purpose of obtaining fuel for their navy.

Mr. ROBERTS. I think, Mr. Secretary, that legislation could be framed authorizing the department to contract for any number of years ahead without the investment of any capital on the part of the Government in developing lands would accomplish what you have in mind in that way, and not go into the partnership proposition.

Secretary DANIELS. It would be a partnership only in this, that you would advance certain money, and everything that the company had would be security for the money you advanced. That is, of course, open to serious objection.

Mr. ROBERTS. Suppose the oil lands petered out that the Government put its money in? I think your idea would be for the Government to advance the money to develop and then to take its equivalent in oil at so much per gallon?

Secretary DANIELS. That is the only sort of proposition we have had. I have told the gentlemen that we could not consider them;

that is, the department could not, without legislation. I think if we could make a contract for 5 or 10 years at a given price for a large quantity that we could get a good proposition.

Mr. WILLIAMS. If we are to construct our ships with a view to operating them with oil, and that is the future policy, ought we not to have some more permanent arrangement for oil than a mere temporary lease of 5 or 10 years?

Secretary DANIELS. Certainly we should. It is now very difficult to buy oil lands, and the only chance for the department, outside of the California oil lands now in litigation that I see, is to lease for a long term lands from the Indians, the leases for which will expire very shortly, and I think we should be in a position to do so.

Mr. HENSLEY. Has there been any effort made to procure oil lands?

Secretary DANIELS. We have had no money to do it. We have been discussing with the Indian Office and with the Secretary of the Interior whether we could lease the Indian lands.

Mr. HENSLEY. Speaking about having the money, do you not think that it would put the Government to a great disadvantage to go ahead and make an appropriation for a purpose of that character? The fellows who have lands to dispose of, realizing that the Government has that amount of money with which to get lands, do you not think it would have a certain effect upon them to place the price of the land to the Government higher than otherwise?

Secretary DANIELS. Everybody is trying to buy oil lands. Of course, people owning oil lands are holding them very high. I do not know of any oil lands that we could buy.

Mr. HENSLEY. With so many men in the employ of the Government, inspectors, etc., it occurred to me that there might be such a thing as sending a man out to procure options upon land so as to know exactly what we are doing?

The CHAIRMAN. Nobody has the authority to negotiate an option.

Mr. WITHERSPOON. Suppose we give the Secretary the authority to do it?

Secretary DANIELS. You do not say how many acres you are going to secure or where you are going to secure it, and we could either make leases or make contracts for 10 years. We have several ways of using the money.

Mr. BRITTEN. You do not have to spend it all at one time?

Secretary DANIELS. No.

Mr. ROBERTS. You do not specify the location?

Secretary DANIELS. No. The point is that something should be done now, because otherwise we will have to pay the market price, and the price is very high and going higher.

Mr. TALBOTT. And it is controlled by the market price?

Secretary DANIELS. Yes; absolutely.

The CHAIRMAN. \$500,000 with reference to oil would not amount to a drop in the bucket?

Secretary DANIELS. It is very little.

The CHAIRMAN. It would not much more than get the options?

Secretary DANIELS. It might enable us to make some leases through the Interior Department with the Indians. It might enable us to make a contract for 10 years with some company.

Mr. BUCHANAN. Have you figured out the saving to the Government if it owned the oil lands?

The CHAIRMAN. That is set out at length in Admiral Griffin's hearing. He said it would be about 43 cents a barrel, the highest price that they figured out, against \$1.39 that they are paying now.

Mr. ROBERTS. That was based on the California land?

The CHAIRMAN. No.

Mr. BUCHANAN. How much money are we spending now?

The CHAIRMAN. A large amount. We will use during the current year over 15,000,000 gallons, at 3½ cents a gallon, and next year it is estimated that it will run up to 30,000,000 gallons.

Mr. Secretary, on this question of oil, I would suggest that you send down a supplemental estimate; let it come in the form of an estimate on account of the method of appropriation, and you may amplify your hearings so as to set out in detail a statement in support of the estimate.

(Copy of supplemental estimate and detailed statement here follow:)

STATEMENT RELATIVE TO PROPOSED FUEL-OIL SUPPLY FOR THE NAVY.

I. General adoption of oil fuel; extent to which the Navy uses fuel oil; the expense and economies to be expected by the Navy producing and refining its own oil supply.—The construction of vessels for the American Navy is of great interest to the navies of other countries, and the United States has the reputation of building excellent vessels. The frigates and sloops of war of 1812 had such superiority in armament and sailing qualities as to excite the wonder of the world; and this advantage accounted largely for the remarkable successes of these vessels in action. It may be remembered, in this connection, that the British Admiralty found it advisable, in 1813, to issue an order that vessels of the royal navy operating against the United States should cruise in pairs and under no circumstances should they seek action with American vessels of greater gunpower.

Of late years all experienced maritime nations find that warship construction becomes standardized very quickly, and that it is difficult to maintain any point of superiority. Nations live too closely together these days and are too intimately in touch for secrecy. Any advance in guns, armor, etc., is faithfully copied, and in a short time the type is again standardized.

The general adoption of the advantages of oil fuel would suffer the same fate were the competing maritime nations able to get the oil in time of war or stagger under the great expense of oil burning in peace time as well as in war. Some first-class powers—the United States and Russia—are self-contained in oil supply, while others have little oil within their own borders, some none at all. It can well be understood, then, that oil is of such importance to the British Navy that a large commission has been formed to see what steps can be taken to render Britain's position secure; and to the deliberations of this commission may be traced the activity of Great Britain in securing an oil supply. We are credibly informed that the British purpose to treat all of the oil-bearing shale lands of Scotland as a virtual naval reserve so that the small amount of oil that can be distilled therefrom will be the self-contained supply for emergencies. The remainder of the oil the British, relying upon their large navy to keep the trade routes open, hope to get from five separate countries more or less widely differing in location. They hope, however, to draw most of this supply from Mexico, falling back upon the improbability of war between Great Britain and the United States as a part of their national security. Mexican Eagle Oil Co., a British firm with large interests in the States of tank farms, costing \$630,500, at Chatham; \$37,345, at Haulbowline; \$582,000, at Humber; \$213,400, at Invergordon; \$64,505, at Pembroke; \$121,500, at Portland; and \$222,500, at Portsmouth, a total of \$1,871,750 outlay in oil stations. Into these the British this year are accumulating \$5,000,000 worth of fuel oil, over 1,000,000 barrels of which comes from Port Arthur, Tex. The British Admiralty also relies heavily for future oil upon Lord Cowdray's

Mexican Eagle Oil Co., a British firm with large interests in the states of Vera Cruz, San Luis Potosí, and Tamaulipas. Recent press dispatches note that Great Britain has served notice that all oil companies in her colonies must be British companies, with a British majority of the directors, and that the right is reserved to take over all oil operations in time of war for naval use. Nevertheless, they are not yet sure of a war-time supply, as evinced by the fact that they have felt themselves obliged to return to coal burning in their latest battleships. Apparently, they dare not now run a risk of oil shortage in their first line of battle.

It should further be noted that the Hon. Winston Churchill, first lord of the British Admiralty, stated to the House of Commons that it is necessary for the royal navy to establish refineries and handle its own oil transportation in order to secure the kind of oil it wants and to reduce the burden of expense. We have no reliable information on France, Japan, and Germany. They are undoubtedly under a serious handicap.

The advantages of oil-burning are so great that they can not be given up by us for military purposes. A far better ship can be built, using oil instead of coal, and this carries with it reliability and ease of steaming—the element of human exhaustion in firing and trimming coal and its effects being eradicated. Boilers may be crowded close together, thus saving weight and space which can be utilized elsewhere; one smokestack only is necessary, thereby giving a more convenient arrangement of turrets and angles of train; the interference of smoke and gases with fire-control parties and gunnery is reduced to a minimum, and smoke and smokelessness may be had at will, which in certain tactical cases is of marked advantage.

The United States produces two-thirds of the world's oil supply, and if the oil fields had been deliberately placed with national defense in view they could not have been better located. The Appalachian fields are close to the Atlantic ports; the midcontinent and Gulf fields are close both to the Great Lakes and to the Gulf of Mexico, and the great California fields close to the Pacific Ocean. Moreover, there is proven oil in Alaska, and many seepages promise future development in the Philippines.

The United States, therefore, stands supreme in production and in reliability of supply. While foreign navies have many perplexing oil problems to face, we have only that of expense to meet and surmount. And it is, then, to our advantage in surmounting this to leave foreign navies and not ours under the staggering expense tending to prohibit the use of oil, while we cut down, by the best available method, the expense of fuel bills—now \$5,000,000 annually, and possibly \$15,000,000 a few years hence. This will bring with it the advantage of designing and maintaining better armed and better armored war vessels, faster and more reliable than any other nation can own.

Advance in price of fuel oil. Expense of oil-burning over coal.—In 1911, when the first oil-burning battleships were commissioned, fuel oil was purchased by us at Port Arthur for 1½ cents per gallon; in 1912 the price went to 2 cents; in 1913 to 3.31 cents. That is to say, the price has practically doubled in the two years we have been using even moderate quantities of it, and since last July's contract for 3.31 was made crude oil in Oklahoma has advanced one-third cent per gallon and will probably continue to advance. If the fleet could buy oil this year at the price existing in 1910 it would have \$370,500 in one year (over one-third of a million dollars). If the large companies, owners of their own production, made profits on this oil in 1910 (which they did), this third of a million means increased profits and not increased expense to them.

The amount of oil used by the Navy this year is 30,000,000 gallons. When the fleet consists of 21 oil-burning battleships and 84 destroyers the amount used will, at the same rate, be 125,000,000 gallons. This fuel bill, at the present prices, will be about \$6,000,000. There is every reason to believe, however, that prices will advance and increase this bill, for the Secretary of the Interior, in a letter to the Navy Department answering the latter's questions as to the future of fuel oil and trend of prices, says:

"Reviewing all of these conditions and estimates, which latter this department is inclined to regard as rather sanguine because of the deterioration that has already taken place in several of the fields through the appearance of water, it may be stated, in answer to your first question, that 20 years hence the price of fuel oil, which then as now will be produced chiefly in California, will be much higher than at present, and the production will probably have declined seriously, although it is likely that it will still be large."

In looking ahead, it must be noted that the heavy-oil engine is being rapidly developed. Types of engines that now burn gasoline and kerosene will proba-

ly use fuel oil, thus resulting in an enormous increase in this type of machinery and in demand for petroleum. The tendency toward higher prices of fuel oil is further stimulated by the improvement in technological processes by which the fuel oils are broken up into more valuable products.

There are quoted herewith excerpts from the speech of Sir Marcus Samuel, Bart., before the Shell Transport & Trading Co. (Ltd., relative to that company's business:

"The position is a very curious one in the oil world at present. In two great producing countries—Mexico and California—production is in excess of the present demand, and the price of oil per ton as compared with coal is actually less. I am convinced that such a state of things can not remain permanent, and that when the enormous superiority of oil, even as a fuel, is recognized, it will realize something approaching its value with coal. With the rapid strides which are being made in improvements in the internal-combustion engines not only for marine purposes, but even for locomotives, oil should be worth at least a ratio of 4 to 1 of coal.

"The business is world-wide, and we are determined that the great distributing organization which we have created shall not be dependent on any one field or upon any one country or upon any one Government. We shall endeavor to acquire oil territories, so essential to the support of our organization, wherever they can be found and obtained under favorable circumstances. It is mainly in pursuance of this policy that we have purchased the California oil fields. It is in connection with that purchase that we are providing the large sums that we have asked you to subscribe.

"If we proposed to handle this production in the same fashion as the vendors did, there would be very little in the deal we have made, except that we are profoundly convinced that the present price of oil of this quality in California can not remain where it is and that an advance is quite inevitable. You can calculate for yourselves that an advance of even 10 cents a barrel on the prices which are obtaining by selling the oil crude, as it is, would suffice to exactly double the dividend upon the properties we have purchased. It is our intention, however, to erect very large storage and pipe lines to and a refinery at the coast. We estimate that the expenditure to attain these objects and to provide ample working capital for new developments may entail an expenditure of something approaching £1,000,000 sterling."

The Secretary of the Interior further states in his letter to the department:

"No relief can be expected in the price of fuel oil at Atlantic ports for commercial uses. These prices will probably tend upward hereafter, although, of course, there may be brief periods during which lower prices will rule, as a result of the development of new fields, for example, those of eastern Mexico. Relief to the Navy from increasing commercial prices can probably be secured only by the development of its own reserves, where it should be possible to produce oils at approximately the present cost of production—50 cents or less per barrel, plus transportation to the point of use."

The many advantages in using oil fuel, especially the superior design of the warships possible by virtue of its use being well known, it is well to consider the only disadvantage it possesses—the cost of oil burning relative to coal. This is introduced to show that the advantages are costly, unless some step be taken to secure cheaper prices. In a lecture before the postgraduate department of the Naval Academy, Read Admiral John R. Edwards, United States Navy, states:

"Some very reliable and valuable data concerning the actual relative cost of coal and oil for naval fuel purposes has been obtained by comparing the continuous, steady-steaming performances of 5 coal-burning turbine destroyers with 14 oil-burning destroyers, all operating along the Atlantic coast, during the fiscal year of 1912. These 5 coal-burning destroyers, during that period, steamed 45,870 miles under steady-steaming condition, and expended 8,606.9 tons of coal, an average consumption of 420.3 pounds of coal per mile. The oil-burning destroyers, during the same period, steamed 156,876 miles and expended 5,901,435 gallons of oil—an average of 38.4 gallons of oil per mile. The cost of coal per pound averaged \$0.00127; that of the crude oil, \$0.045 per gallon. These relative prices are based upon the lowest cost of oil at any point on the Atlantic coast, as compared with the cost of coal at Norfolk, Va., and therefore favor coal rather than oil. It will thus be observed that the average actual cost of fuel per knot for the coal-burning destroyers was \$0.43, while that of the oil destroyers was about \$1.72. The actual cost of operating on the Atlantic coast on oil destroyer, from the fuel-cost standpoint, was therefore

about four times as great as operating a coal-burning destroyer. As pertinent to this comparison, it should be stated that the machinery of oil destroyers was a later and more efficient turbine design than the machinery of the coal destroyers. The economy of the oil-burning destroyers ought, therefore, to have exceeded the coal destroyers, as far as machinery installation is concerned."

It will thus be seen that oil burning will impose a severe financial tax upon the Government; and, if any scheme can be evolved that will reduce this burden to the naval establishment, our Government should adopt it.

Cost of producing and refining.—The following estimate shows the cost of producing and refining 1 barrel of fuel oil:

Producing:		
Bonus, rental, etc., per barrel	\$0.085	
Drilling and cleaning	.25	
Pumping and storage	.11	
Royalties, field maintenance, etc	.165	
	.61	\$0.61
(This cost also includes drilling to maintain output.)		
Transportation:		
Gathering charge	.20	
Piping to Port Arthur	.40	
	.60	1.21
Refining:		
Fuel	.08	
Labor	.02	
Depreciation, fire protection, interest	.05	
Water, acid, and incidentals	.02	
	.17	1.38
General administration, terminal	.10	.10
		1.48

It is thus seen that 1 barrel of oil costs \$1.48 to produce, pipe to Port Arthur, and refine into gasoline, kerosene, and fuel oil. This barrel of oil, after refining, is, however, worth as follows:

6 gallons naphtha, at 12 cents	\$0.72
5 gallons burning oil, at 5 cents	.25
30 gallons fuel oil, at 3.31 cents	.90
(One gallon loss.)	
Value of 1 barrel oil	1.96
Cost	1.48
Profit on 1 barrel crude	.53

NOTE.—In 1907 the Bureau of Corporations estimates that the average profit per barrel at the Lima, Whiting, Neodesha, Sugar Creek, and Florence (Colo.) refineries was \$0.975. This profit included that of marketing but not of pipeline transportation. The per cent profit on investment at these refineries averaged 42 per cent.

Note that to obtain 30 gallons of fuel oil 1 barrel (42 gallons) of crude must be refined. To obtain 1 barrel of fuel oil, then, 1.4 barrels of crude must be refined, which results in the following:

Production of 1.4 barrels crude	\$0.854
Pipe line costs	.840
Refining	.165
	1.863
The sales from gasoline and kerosene will be as follows:	
8.4 gallons naphtha, at 12 cents	\$1.03
7 gallons burning oil, at 5 cents	.35
	1.43

Fuel oil (the remainder) would therefore cost the difference—\$0.432 per barrel, or about one-third of its present cost.

From page 584, Bureau of Corporation's report, we estimate the following cost at well at 1 barrel crude:

Producing (own figures)-----	\$0. 61
Gathering charge-----	. 20
Trunk line charge (to Port Arthur)-----	. 40
Refining costs, proper-----	1. 546
General administration-----	. 1050
Depreciation, at 5 per cent.-----	. 04
Total -----	1. 5096

This estimate total checks fairly well with our own. The profit per barrel at Neodesha was estimated to be \$0.75 per barrel, due to deeper cuts of gasoline and kerosene. Here, as usual, the transportation charges cut deeply into our own profits. The estimated true costs of gathering and transportation is 18.3 cents, whereas the charges we may expect to meet are 60 cents. The estimates presented pertain to Oklahoma oil. This oil is a high-grade paraffin oil, containing a good percentage of gasoline and kerosene, and containing excellent lubricating stocks as well as paraffin wax. As a matter of conservation, it is really too valuable for use as a fuel oil when compared with the heavy Mexican oils that are good only for fuels and asphalts. And its use would not be considered were it not for the fact that these estimates show that by producing, piping, and refining, free fuel oil can be obtained, the gasoline and kerosene sales from them paying the bill. The Mexican oil presents certain drawbacks for naval use, however, which must be considered—(1) they are thick and viscous and must be heated (in bunkers) before they can be pumped; (2) they contain a high percentage of sulphur, detrimental to boilers, piping, and possibly to the ship's hull; and (3) the supply comes from foreign territory.

At the present time Mexican oil is being sold at Tampico at from 60 to 80 cents per barrel, and contracts exist for the delivery of large quantities of oil at Baltimore and at Galveston for \$1.10 and 90 cents, respectively. This is the viscous 11.6 Baumé oil—far heavier than any oil to which we are accustomed. For our purpose Oklahoma oil is superior, and, as can be seen by the estimates quoted, is cheaper if the Navy produces and refines its own oil and gets authority to sell the gasoline and kerosene therefrom. Moreover, should the Navy further make their own lubricants, Oklahoma oil will give better stocks than will Mexican.

Mexican oils will therefore not be further considered.

II. *Production of oil.*—The Federal Government has control of oil lands in two States, California and Oklahoma. In the latter State the Federal Government's control is limited to that incident to its guardianship of Indian lands. In California the Navy has already been given 106 square miles of oil land by the Federal Government, but the patents to the areas of known productivity therein are in litigation. Should the Navy produce and refine sufficient oil from its lands on these California reserves to supply the east coast, the freight cost from west to east coast would render it more expensive than oil produced and refined on the east coast; moreover, there are very patent military reasons why the oil supply for the east coast should be obtained close to the eastern seaboard.

Next to California, the midcontinent States are the great oil producers. Thus California in 1912 produced 86,450,767 barrels, while Oklahoma, Louisiana, and Texas produced 72,425,567 barrels. The possibly productive area in the latter States is much greater than in California, although not so well outlined or so easily interpreted geologically, but it is safe to say that the production of these fields will surpass that of California, although it may not hold the lead in years to come.

The large companies operating in the midcontinent fields are the Standard, the Texas, the Gulf Refining, and the Magnolia. All of these has its own system of pipe lines, tank farms, and refineries. The Standard apparently predominates, inasmuch as it advances the price of crude and other companies follow its lead.

Attached hereto is a map showing in general the midcontinent and Gulf oil fields, with pipe-line leads and refinery locations. From this it can be seen at a glance that the demand for petroleum products makes it worth while for the big companies to invade every field and to build pipe lines to them. Some idea

of such expense may be gathered from the hearsay statement that it cost the Gulf Refining Co. about \$7,000,000 to run its pipe line from Port Arthur to Tulsa (about 400 miles), and that a bonus of \$225,000 on the lease of 400 acres of Osage land was offered by the Prairie Oil & Gas Co.

The methods of acquiring land for oil production are (1) purchase in fee simple, and (2) lease, generally on a basis of one-eighth of the oil for the owner and seven-eighths for the company, together with a cash bonus per acre, this latter amount varying with the prospective value of the land as possibly productive territory. The latter method is the one usually employed, and all companies have an official in each district whose business it is to watch carefully the local oil production and secure advantageous leases for his company.

It seems to be a fact that once a refinery is established, economy and competition demand that it be run to its full capacity. It is then up to the line pipe to supply the necessary amount of oil, and, in turn, up to the producing company to see that the pipe line is fed the full line capacity. The producing department thus protects itself by keeping large stocks of oil in tanks or underground at the fields, so that this department can not fail to do its part.

The general method of producing is as follows: A company leases a good productive section in proven territory. It immediately drills wells as close as 400 feet apart along the outside border, if a good pool is developed, and 200 feet inside of the line, in order to drain from across the line or to prevent others from profiting by the same trick. If dry wells are not encountered, this results in wells all around the square mile. These wells being productive, it is practically certain that all of the interior of the square mile is productive also. In this case it is considered good practice to keep the interior undrilled, in order that the oil may remain in safe storage underground, unexposed to loss by fire, loss of volatiles by evaporation, or exhaustion of the field by overproduction. When the oil is needed, wells can be quickly drilled and this stock tapped. Being secure in this respect, the oil company with a good stock is in a position to buy oil from independent producers.

The companies apparently keep one year's supply in tanks in the fields as stock. For instance, the Gulf has 6,000,000 barrels stock in the Oklahoma field, the Texas Co. 3,000,000, and the Standard 43,000,000. It can be seen that with the production in sight the company can make contracts with confidence and is in the best possible condition to keep its whole system in high-pressure, full-running order, capable of large expansion at the refinery end as the market may dictate. At the same time this leaves the production department in the best position to choose leases and produce oil in a judicious manner, unhampered by any sudden and large call for oil to feed the system.

It must be understood that no company rushes wholesale into an unproven territory and begins wildcatting over a large area. While attention is paid to the logical features, yet most of the drilling is done along lines of extension of expansion of proven land. Leases are taken at nominal sums and held until either dry holes or other discouragements swing production in other directions, or, on the other hand, production advances to its edge, whereupon the lease is either given up or drilling is begun, as the case may be.

It appears best, therefore, for the Navy to begin on a modest scale until her new oil company has advanced in organization and to a secure footing. We are advised against a large lease in the Osage country, unless the lease carries with it practically no obligation to drill wildcat wells. To take 5,000 acres upon which the Interior Department may possibly require a wildcat well drilled on every 160 acres would result in drilling 31 wells at a cost of \$300,000, this with a large chance of numerous dry holes. We are advised, therefore, to secure a lease of a quarter section (160 acres) of productive land and begin development thereon, and when more experience is gained to begin picking up leases here and there, according to the best advices and judgment of the field manager. Or, in order to prevent the line fighting and possibility of water menace from small holdings not contiguous, to get an option on 5,000 acres en bloc.

Recently the Navy Department has requested the Interior Department to state the bonus on which 5,000 acres of Osage land may be taken over by the Navy Department. It is advised that this be secured.

III. *Transportation*.—The attached map shows the present pipe lines. The Prairie (Standard) owns the one to Baton Rouge and the Texas Co. and the Gulf Pipe Line Co. those to Port Arthur. The Magnolia Co. is also contemplating an extension of their line to Oklahoma. Should the Navy refinery be

located at Port Arthur, oil for the Navy refinery will have to be transported either by tank car or be pumped through the Texas or the Gulf Pipe Line Co.'s lines or by a Government pipe line. At present the Supreme Court is deciding the constitutionality of the law requiring pipe lines to be common carriers. If the decision is in the negative, we may as well abandon all thoughts of going into the oil business, unless Congress allows the building of a pipe line into this territory.

The cost of tank-car transportation is 40 cents per barrel. The principal trouble with tank-car deliveries is the difficulties and uncertainties of prompt delivery of the crude, thus requiring very large stocks to be carried at the refinery. It would be impossible to conduct an oil business if reliance has to be placed on railroad transportation.

IV. Refinery sites and refining of oil.—From Oklahoma the bulk of the oil is run north to the refineries at Neodesha, Kans.; Sugar Creek, Mo.; Kansas City, Mo.; Alton, Ill.; and Whiting, Ill. Large quantities are also run to Baton Rouge and to Port Arthur. Whenever there is a good local market for refined products, such as at Dallas and Fort Worth, a small refinery is erected there to supply this market. The large refineries of the Gulf Refining Co. and of the Texas Co. are at Port Arthur, while those of the Standard (for Oklahoma crude) are at Baton Rouge; Wood River (Alton, Ill.), and at Whiting, Ill. In an attempt to discover why the refineries are placed at Port Arthur and at Baton Rouge, where labor costs are very high, these points developed: First, it is apparently advisable to have the refinery close to the oil fields, for here natural gas is available for cheap fuel. If, however, this point is distant from the shipping port or large retail distribution center, it would result in an expensive pipe line for each product or shipment in tank cars, which latter method is too slow and too costly for catering to bulk cargo shipments. This would also result in small refineries in each field or at each pool, with a complexity of pipe lines. The next place to consider is, then, some seaport in convenient reach of all the oil fields—the pipe lines to handle crude only, the products to be shipped by water. Water transportation is cheaper than rates we can get by pipe-line transportation; and this is apparently the keynote of refinery locating for us. It has already been shown that the costs of petroleum are about as follows:

Producing	-----	\$0. 61
Transportation by pipe line	-----	. 60
Refining	-----	. 22
Water transportation to New York	-----	. 25
		<hr/> 1. 68

Producing costs remain the same irrespective of refinery location; there is no room for as large economies in refining as in the transportation. Transportation (actual, using Bureau of Corporation's figures) costs 18.3 cents per barrel for the 425 miles by pipe line to Port Arthur, although the company's charges as a common carrier (not including gathering charges) are 40 cents per barrel. Transportation, further, to New York by water costs 25 cents per barrel. By-pipe line to New York from Oklahoma the cost would be (actual) about 30 cents per barrel; but we need never expect to get such prices, the old rate from Chicago (Griffith, Ind.) to Philadelphia being 68.5 cents, or practically the same as the cost of transportation to Port Arthur, plus water transportation to New York. It appears, therefore, that cheaper transportation can be obtained actually via Port Arthur.

In refining the cost of labor is 0.02 per barrel, while, as stated before, transportation will be many times higher than labor costs. It becomes evident, therefore, that the price of labor could be doubled or trebled without any undue alarm at the increase in oil prices, whereas a transshipment of oil would raise the price from 15 to 20 per cent. If the Texas Co. has a refinery at Port Arthur and one at Philadelphia (both supplied with crude oil from Port Arthur), evidently the Port Arthur refinery could place a refined product on the Key West market at a lower price than can the Philadelphia refinery, for the Philadelphia refinery would have to pay transportation on the crude oil from Port Arthur to Philadelphia, and on the refined from Philadelphia to Key West, while the Port Arthur refinery would pay transportation on refined from Port Arthur to Key West, thus saving over 2,000 miles of routing.

This argument pertains to us to far as supplying Guantanamo by transshipment is concerned. The demand for oil for the Navy is from the following main ports:

Port.	Amount.	Percentage of total.
Norfolk.....	138,614	19
Melville.....	206,559	29
Guantanamo.....	160,277	22
New York.....	93,712	13
Boston.....	30,728	4
Charleston.....	10,694	1
Key West.....	28,208	4

Melville is the port where the major portion of the oil is required, but a refinery there would oblige transportation of oil from Port Arthur to Melville and back to Guantanamo and other places not on the return trip route, and the necessity of reshipping this oil would more than offset the higher price of labor at Port Arthur, the price of land for a refinery site at that place, and any other consideration that may arise.

Apparently, then, the refinery should be at the end of a pipe line as near the port of largest consumption as possible.

Initial expense of leasing land, drilling, laying pipe line, and erecting refinery to secure these profits:

Scheme No. 1 (Government to lease and drill lands, lay pipe line to gulf, and erect refinery):

Lease of land.....	\$500,000
Drilling.....	3,900,000
Gathering and trunk pipe lines.....	4,000,000
Topping plant and terminal.....	542,000
Total.....	3,992,000

Scheme No. 2 (Government to lease and drill lands and erect refinery, but not to lay pipe lines):

Lease of lands.....	500,000
Drilling.....	3,900,000
Topping plant and terminal.....	542,000
Total.....	4,992,000

Total savings or expenses under these two schemes:

(A) Using estimate No. 1 (cheapest costs) and estimating on profits from handling 16,000 barrels of oil per day, carried for others as common carriers:

Profit on oil used by Navy.....	\$870,000
Profit on oil transportation.....	364,000
Profit per annum.....	1,034,000

It, therefore, appears that the Navy gets free oil thereby (a saving of \$1,400,000), and can also pay off initial costs in nine years.

(B) Using estimate No. 2 (cheapest costs, but no pipe line):

Profit on oil used by Navy.....	\$86,000
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It, therefore, appears that Navy gets free oil under this scheme (a saving of \$1,400,000) and also a meager profit.

(C) Using estimate 3 (highest costs, but Government pipe line):

Profit on oil used by Navy.....	\$152,000
Profit on oil transportation.....	364,000
.....	516,000

It therefore appears that the Navy gets free oil under this scheme (a saving of \$1,400,000), and can also pay off the initial costs in 18 years.

(D) Using estimate 4 (highest costs and no pipe line) :

Cost to Government of oil for Navy----- \$432,000

It therefore appears that the Navy gets oil at a saving of about \$1,000,000 per year over the present purchase system (contract).

Résumé.—It is apparent from the foregoing that the savings to the Government under the most unfavorable estimate is \$1,000,000 better than present conditions.

It is apparent, then, that the Government, should it produce its own oil, should save the large profit of pipe-line transportation now accruing to the pipe-line companies by building its own pipe line.

This can not be done instantly, however. To successfully operate a pipe line, contracts for handling a full-line amount of oil must be secured before the pipe line is laid. The amount used by the Navy will be but one-fifth of the full-line capacity; the other four-fifths of the space can be used in piping oil as a common carrier.

The Navy must also secure its own production—secure leases, drill, and get and maintain its own supply—prior to building its own pipe line and to erecting a refinery.

For this purpose it is advisable to get an appropriation of \$500,000 to secure a lease of a modest amount of land as a beginner—say a quarter section of **highly** probable land—the remainder of the \$500,000 to be used in drilling and in acquiring additional land, at the best judgment of his manager in the field. The acquiring of land can thus be done in a common-sense manner, and the expansion of the oil operations can be developed in a natural and logical manner.

Additional authority.—It must be understood that the profits depend upon the authority to sell the gasoline and kerosene distillates from the oil; also, authority must be given to sell the fuel oil at the wells until the refinery is established. In brief, the Government must have the same rights as any company beginning operations therein.

DEPARTMENT OF THE INTERIOR, BUREAU OF MINES,

Washington, January 26, 1914.

The Hon. SECRETARY OF THE INTERIOR.

SIR: In response to a request for an expression of opinion as to the wisdom and desirability of a governmental policy through which the Navy Department would own its own oil fields and would produce and refine its own fuel oil, I respectfully report as follows:

I am convinced that it is a wise policy for the Navy Department to own or control at least two oil areas, one on the Pacific coast and one in the mid-continent field, tributary to a Gulf or Atlantic port, each of these fields capable of yielding a supply exceeding the total needs of the Navy Department for a number of years to come.

(1) The carrying out of such a policy will give the best assurance of an adequate and permanent supply of oil suitable for the needs of the Navy.

(a) No other system could better facilitate the rapid development and exhaustion of an oil field than the system now generally followed, which encourages a large number of producers to rush operations in an oil field, with the expectation on the part of each operator that through this hasty procedure he may extract the oil from beneath his neighbor's fields, and at the same time prevent his neighbor from extracting the oil under his own fields by extracting it first.

Meanwhile, also, the rapidly increasing demand for American oils in many different countries is accompanied by a steadily rising price, which in turn stimulates the producer to even more rapid production.

The large and rapidly increasing investments of foreign capital in American oil fields, and the large and long-term contracts now being made by these alien companies, and even by domestic corporations, for supplies of American oil to be delivered in foreign countries for both governmental and private uses, are rendering all the while more certain the rise in the price of oil for domestic consumption and are rendering more necessary the adoption of such a policy as a means of insuring a permanent and a satisfactory supply of oil for our own Navy.

(b) There is in connection with this ever-increasing and unregulated rush activity in oil development an increasing risk of largely reducing the value of

our oil reserves through the penetration of underground waters into the oil-bearing strata in our different oil fields. The value of many oil fields is already being seriously reduced by such water invasion of the oil-bearing strata. And it will be only through the exercise of constant and vigilant supervision that even a naval-reserve oil area in any oil field can be protected from this underground menace, if unregulated drilling operations are permitted in the interior or about the borders of such a reservation.

(2) The adoption of such a policy would, I believe, largely lessen the cost to the Government of an adequate future supply of oil for the Navy. In fact, I believe that if the Navy Department can be secure in its oil-land holdings on a reasonable basis, and can be authorized to arrange for the transportation and refining of its oils, the sale of the higher-priced light oils which it will not need for its own use will not only cover the cost of refining, but will also cover or largely reduce the cost of the drilling, transportation, and storage of the oils needed for naval use. The price of oil is increasing, and will doubtless continue to increase with the growth of the demand for oil in different countries and for different purposes. It will probably increase by leaps and bounds. Thus, two and one-half years ago the price of Oklahoma oil increased abruptly from \$0.48 to \$1.05 per barrel.

This certain increase in the price of oil will be due not so much to a necessary increase in the cost of production as to an increase in the demand for oil without a corresponding increase in the supply. By securing and reserving its own supply of oil the Government can avoid having to pay the large increase in price which will come from this increase in demand for oil for naval and commercial uses in other countries.

I believe it good policy that the Government should refine its oil supply for the use of the Navy, for the following reasons, which, while applying to both the California and midcontinent oil fields, apply to the latter fields with special emphasis:

- (1) Such a plan would reduce the cost of a naval oil supply.
- (2) Such a policy would insure for the Navy's use a more uniform product and the product best adapted to its needs. A 16B-gravity fuel oil obtained from a refinery is safer for naval use than a 16B-gravity fuel oil used in its natural or crude condition, as the latter is more likely to give off explosive gases.
- (3) The experience growing out of both the extraction and the refining of the Navy's oil supply would give to the agents of the Government a more intimate knowledge concerning and a better understanding of the drilling, the refining, and the transportation factors in the petroleum industry of the country; and this knowledge would be of great service to the Government in its study and interpretation of the salient features of the industry in its relations to the public welfare.

I have read with care, and beg to express my approval of, the excellent presentation of the different phases of this subject by Lieut. Commander David F. Boyd in his memorandum on this general subject prepared for the Chief of the Bureau of Steam Engineering of the Navy Department.

Respectfully,

J. A. HOLMES. *Director.*

JANUARY 21, 1914.

MY DEAR MR. SECRETARY: In reply to your letter of December 27, 1913, asking my views as to the advisability of the Navy owning its own oil fields and producing and refining its own fuel oil:

Your letter calls attention particularly to estimates and suggestions which have been made in the Navy Department, and this phase of the subject has been considered briefly in a memorandum from Mr. Day, of this survey, which I have the honor to transmit herewith, in accordance with your request for his opinion.

Considered broadly from the point of view of economy to the Navy Department in the purchase of its fuel oil, it is wise to recognize some of the difficulties resulting from the lack of elasticity which any Government project must contend with. A commercial concern, for instance, is able to so dispose of surplus by-products as to take advantage of any fluctuations in market demands, which are unusually sudden in the oil industry, and again, the commercial organization is able to utilize its transportation and sales facilities for the disposal of these various products with the effect of keeping the plant up to its full capacity practically all times. However, these economies that give an advantage to

the large corporation do not, in my opinion, offset the advantage attending Government ownership and operation with the purpose of furnishing fuel oil to the Navy. In any discussion of expenses of production of fuel oil, it must be kept in mind that costs to the Government are not to be compared with costs to the corporate producer, but rather with the prices put upon the product when sold to the Government. The profits in the oil-refining business are believed to be sufficiently large to result in a satisfactory margin of safety in estimating for Government operation.

In addition to these possible economies in preventing the cost of fuel oil to the Navy from following the increase which is probable, and other benefits, I am inclined to give even more weight to the larger consideration of practical independence for all demands or requirements of commercial oil production and refining. If the Navy can exercise complete and efficient control over the subject of oil fuel from the stage of crude oil in the ground through to the finished product as served to the battleships, there must result an increased efficiency on the part of naval officers from this intimate association with oil technology, and also the advantage of applying promptly to the Navy's use such technological and purely scientific improvements in oil as may be derived from the investigations of naval officers or other experts within the Government service. There will be also a greater opportunity for promptly varying the nature of the fuel oil supplied to the vessels so as to meet demands of any new and improved engineering practice. It seems, further, that the confidential character which can be given to the preparation of fuel oil may become as important as that of the preparation of explosives.

Yours, very truly,

GEO. OTIS SMITH, *Director.*

HON. FRANKLIN K. LANE,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, January 21, 1914.

THE SECRETARY OF THE INTERIOR.
(Through the Director of the Geological Survey.)

SIR: Your letter of December 23 transmitting a letter from the Secretary of the Navy asking for my views as to the wisdom and desirability of the Navy owning its own oil fields and producing and refining its own fuel oil, has been received, together with a copy of a letter from Lieut. Commander David F. Boyd, United States Navy, on this subject.

I have carefully examined the letter of Lieut. Commander Boyd and find that the estimates of cost are conservative and in no case do they underestimate the cost of producing, transporting, or refining oil, in so far as I am able to judge. On the other hand, it is probable that the refining costs of all kinds, with the possible exception of the cost of supervision, can be materially reduced.

A study of the statistical conditions concerning the oil trade of the United States convinces me that the price of fuel oil will probably increase steadily during the next few years. In making this forecast of the price of fuel oil it is recognized that the oil fields of California are capable of supplying oil in excess of the present production and in excess of the present consumption, although both production and consumption increased significantly during the year 1913. The consumption increased at a more rapid rate than the production, and overtook the production during the year.

The opening of the Panama Canal may be expected to result in the shipment of considerable quantities of crude petroleum and of fuel oil from California to the eastern coast of the United States. These shipments will be affected to a marked degree by the development of petroleum in Mexico. This Mexican petroleum is in general similar to the California oils, though containing much more sulphur.

The production in Mexico has been rendered more important within the last year by the opening of several additional wells of great capacity. The supply of petroleum in Mexico is now ample for existing contracts and to supply the increased transportation facilities, which include a fleet of about 40 tank steamers. These vessels are, on the average, larger than those ordinarily used in oil transportation.

The effect of this increased supply of fuel oil from California and Mexico will probably not be a reduced price of fuel oil. On the contrary, the increased supply may be expected to result in higher prices because the total amount of fuel oil available from California, and from Mexico on the eastern coast, will be only a small proportion of the amount which can readily be consumed for steamship, railroad, and especially manufacturing purposes with considerable resultant advantage, even with higher prices of oil. The price, therefore, will rather depend upon convincing the consumers of the durability of the supply and rendering the oil popular. With increasing popularity the price of oil may be expected to increase.

The evident result of these statistical considerations is in favor of the policy suggested at the beginning of this letter—that is, for the Navy to produce petroleum and refine its fuel oil.

It should be pointed out that the more evidently necessary policy for the Navy in the immediate future is to supply large tankage at appropriate points and to collect in storage a much larger supply of fuel oil to be purchased at the present comparatively low prices.

Very respectfully,

DAVID T. DAY, *Petroleum Statistician.*

Mr. STEPHENS. I understand the chairman to say that the Government has been paying \$1.39 for oil and are paying that now. Is that on the Atlantic side?

The CHAIRMAN. Yes.

Mr. STEPHENS. What is the price on the Pacific side?

Secretary DANIELS. Eighty-nine cents.

Mr. STEPHENS. Is it not possible for the Government to transport the oil by water from the Pacific to the Atlantic and land it here for a much less price than that?

Secretary DANIELS. I think when the Panama Canal is open we might possibly get cheaper oil that way. It depends upon the relative advance of prices on the Atlantic and Pacific coasts.

Mr. ROBERTS. If we were equipped with tank ships we might be able to do that, but that would depend upon the commercial tankers!

Secretary DANIELS. We have one now and two building.

Mr. ROBERTS. The three would not be able to transport all of the oil we want?

Secretary DANIELS. No.

The CHAIRMAN. The price of oil is advancing on the Pacific as well as on the Atlantic.

Mr. BRITTEN. What is the capacity of a tank ship?

Secretary DANIELS. The *Arethusa* has a carrying capacity of 30,000 barrels; the *Maumee* and *Kanawha*, 55,000 barrels each.

Mr. BRITTEN. How many gallons would that be?

The CHAIRMAN. A gallon weighs a little short of 8 pounds.

Mr. STEPHENS. Do you remember how much this contract was for on the Pacific coast, what proportion of the total?

Secretary DANIELS. A very small proportion. We have only a few oil-burning vessels there at present—several tugs and one monitor. Some oil is used at the navy yards also.

Mr. STEPHENS. Do you not think that if the Government should contract for a very much larger supply it could obtain it at a much less price than 89 cents and could have done so at the time?

Secretary DANIELS. I do not know. When the Panama Canal is open we can do so.

Mr. STEPHENS. In other words, California produced very nearly 100,000,000 barrels of oil this year. The Panama Canal will shortly be open, and if a contract could be made on the Pacific coast for a

large quantity of oil, I am satisfied that the Government could lay it down on the Atlantic coast, a large part of the oil that it needs, for much less than \$1.39.

Secretary DANIELS. When we commence to make the contracts I think that should all be taken into consideration.

Mr. ROBERTS. We are not equipped now for storing much oil on either coast?

Secretary DANIELS. Not very much.

Mr. ROBERTS. The storage of oil is getting to be as serious a question as the storage of coal heretofore has been?

Secretary DANIELS. Yes.

Mr. ROBERTS. Do I understand that there are recommendations for oil tanks?

Secretary DANIELS. Yes.

The CHAIRMAN. A little less than \$500,000. A part of that is for a coal tower.

Secretary DANIELS. We estimate for oil tanks at Norfolk, San Diego, Puget Sound, San Francisco Bay, and Melville, R. I., \$500,000.

Mr. ROBERTS. Has the location of those oil-storage places been selected?

The CHAIRMAN. Yes. For additional full storage, at Melville, R. I., \$20,000; additional fuel storage at Norfolk, Va., \$150,000; fuel storage at San Diego, Cal., \$50,000; oil storage at Puget Sound, Wash., \$105,000; fuel oil storage in vicinity of San Francisco Bay, Cal., \$100,000.

Mr. ROBERTS. Take the \$20,000 for oil storage at Melville, how large a quantity of oil will that provide for, what will be the capacity of the tanks?

Secretary DANIELS. 2,500 tons; \$40,000 will build a 7,000-ton tank.

Mr. ROBERTS. With the necessary pumping appliances?

Secretary DANIELS. We have tanks there already. That does not include the pumping appliances.

Mr. ROBERTS. The storage of oil requires a great deal of land, does it not, so that there will be no danger of fire being communicated from one tank to another?

Secretary DANIELS. Yes; you have to be careful about that.

Mr. ROBERTS. Do you not have to keep the tanks separated by quite a space?

Secretary DANIELS. Yes; generally about 400 feet between tank centers.

Mr. ROBERTS. I notice that the private concerns do that. Have you the necessary land?

Secretary DANIELS. We have the land in these cases.

Mr. ROBERTS. There is ample room between the tanks?

Secretary DANIELS. Yes.

Mr. ROBERTS. How much enlargement of the storage at the various places can be made without additional land?

Secretary DANIELS. In general, we have sufficient space for the necessary expansion for some years to come. At New York we must purchase land unless the War Department allows us to erect oil tanks on Governors Island—which at present they are unwilling to do. I trust they will finally agree, for land near New York is high priced. Possibly we may have to buy land at Puget Sound and at Norfolk.

The CHAIRMAN. Mr. Secretary, have you any other subject which you desire to present to the committee?

Secretary DANIELS. We have a bill for the creation of the rank of vice admiral.

The CHAIRMAN. On that subject I introduced the bill, and you wrote me a letter on January 28, 1914, which I will ask you to incorporate in the hearings.

Secretary DANIELS. I will thank you to do so.

(The letter referred to by the chairman follows:)

JANUARY 28, 1914.

MY DEAR MR. CHAIRMAN: I am transmitting herewith a copy of a proposed bill which has as its object the increased efficiency of the service through the reestablishment of the grade of vice admiral. The grade is created a permanent one and provides for six numbers therein.

A proper fleet organization is the cornerstone of fleet efficiency. Maximum efficiency is impossible without it. The prime essential of a proper organization is the assignment of officers of high command who possess rank commensurate with the importance of the duties placed upon them.

A fleet is divided into squadrons and divisions. A division should be commanded by a rear admiral, a squadron by a vice admiral, and the fleet by an admiral. The unit of efficiency is the division.

I do not ask for the rank of admiral at this time, but one higher rank than rear admiral is absolutely necessary. This is recognized by all foreign navies, and I append a table showing the high naval ranks in foreign countries. Future naval battles will be fought by fleets similar to the last great naval battle in the Straits of Tsushima. In that battle the Japanese fleet, the successful one, was under the command of an admiral, and had five vice admirals and five rear admirals. The Russian fleet was under the command of a vice admiral and had three rear admirals.

It is of supreme importance that our Navy should have the proper organization to carry on battle drills and maneuvers in time of peace under the same organization that would prevail in time of war.

Our three fleets, the Atlantic, the Pacific, and the Asiatic, should be commanded by vice admirals, and since these officers should not be kept continually at sea the suggested number required is six. At the present time our Pacific Fleet is not large, yet its operations cover an immense area. With the opening of the Panama Canal its size will be undoubtedly increased. Of course, there is always the chance of international complications.

As for the Asiatic Fleet, while it will probably never be increased to the size of the Atlantic Fleet or Pacific Fleet, it is very necessary that it should be commanded by a vice admiral. The officer in command of this fleet has important and delicate problems calling for wise diplomacy, as well as ability as commander of the fleet. Fleets of other countries often gather in those waters, and it is most important that we should have an officer of high rank, so that in the event of combined operations that officer would take charge.

This phase of the question is now acutely emphasized in Mexico, where we are placed in the position of having Rear Admiral Fletcher in command of a large force, junior in rank to Rear Admiral Craddock, with a very much smaller force. This will almost invariably be the case where we come in contact with foreign nations, because not only have we no rank higher than that of rear admiral, but our officers reach that rank so late in life as to be almost always junior to foreign officers.

Next winter when foreign fleets gather at Hampton Roads upon our invitation, we should have officers of high rank who would not be junior to those of other countries.

The idea has been advanced that while there is a necessity for the grade of vice admiral, these officers should only be temporarily commissioned while afloat, and upon being ordered to shore duty they should return to their former grade. I hope the committee will not approve of such provision. As stated before, the prime object of having the higher rank is the efficiency of the fleet, and it can not promote the highest efficiency to have an officer devote all his efforts and enthusiasm to the fleet, and, then, as a reward be compelled to give up his rank.

Apparently the idea of having only temporary commissions originated from the fact that vice admirals, whom we had shortly after the Civil War, did not go to sea. It must be remembered that at that time both the grade of admiral and vice admiral were given as a reward for services performed. They were not expected to go to sea. To-day the situation is entirely different. Vice admirals are needed for sea service. They are intended to command the Atlantic, Pacific, and Asiatic Fleets.

Sincerely, yours,

JOSEPHUS DANIELS.

Hon. L. P. PADGETT,
Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.

A BILL To increase the efficiency of the United States Navy by the appointment of six vice admirals.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the active list of the line of the Navy is hereby increased so as to include the grade of vice admiral, which grade shall consist of six officers, four of whom shall be appointed within one year from the passage of this act, and the remainder shall be appointed as soon thereafter as practicable. Appointments to the grade of vice admiral shall be made by selection by the President, by and with the advice and consent of the Senate, from among officers on the active list of the line of the Navy who have served with credit in the grade of rear admiral in command of a fleet, squadron, division, or other command afloat: *Provided*, That no officer shall be appointed a vice admiral until his physical fitness to perform all the duties of that grade has been established to the satisfaction of a board of medical officers appointed by the Secretary of the Navy: *Provided further*, That any officer now or hereafter carried in the grade of rear admiral as an extra number shall cease to be an extra number if appointed a vice admiral.

Sec. 2. That the annual pay of vice admirals on sea duty or on shore duty beyond the continental limits of the United States shall be \$11,000; when not on such duty, they shall be entitled to the pay and allowances of a rear admiral of the upper nine.

Sec. 3. Vice admirals shall be placed on the retired list at the age of sixty-two years: *Provided*, That the President may continue them on the active list until the age of sixty-five years: *Provided further*, That vice admirals on the retired list shall receive the pay allowed retired rear admirals of the upper nine.

Sec. 4. Vice admirals shall be ordered to duty as commanders in chief of the United States Atlantic, Pacific, and Asiatic Fleets, or to such other duty as the Secretary of the Navy may direct.

Secretary DANIELS. In the recent situation in Mexico when we requested Admiral Craddock to let Admiral Fletcher have the command and leadership there we had to cable to England and ask permission for that. They granted it, but they did not seem to think this Government should have made the request. It might readily happen that another nation might not be so agreeable.

Should international affairs so develop that we find ourselves again operating with other nations, it may readily come to pass that we will again occupy a subordinate position among nations not so ready to waive their rights as was England in this instance.

Neither is it particularly pleasing to have it intimated to our diplomatic representatives abroad that if we would only conform to the usages of the other great nations we need not continually be putting ourselves in the position of asking favors.

Mr. ROBERTS. Is Craddock a rear admiral?

Secretary DANIELS. I think he has a longer commission.

Mr. ROBERTS. Suppose we had a vice admiral down there, and any foreign Government wanted to mix in the matter, it could very easily take command away from us by sending a vice admiral of a longer date of commission than ours?

Secretary DANIELS. Yes.

Mr. ROBERTS. While I am in favor of the vice-admiral bill, I do not see how it is going to obviate the difficulty. Not in every instance, but generally in most cases the vice admiral would outrank.

Secretary DANIELS. Yes; that is, a vice admiral will outrank any rear admiral, even if he has just received his commission.

The CHAIRMAN. I have a letter from you, Mr. Secretary, of date January 28, 1914, relative to making immediately available the appropriation additional; it is not an additional appropriation, but the required amount for the completion of the dredging of the river going up to Mare Island, and I will put that in the hearings?

Secretary DANIELS. I wish you would.

The CHAIRMAN. It is not an enlargement of the appropriation but simply to make it immediately available. As I understand the necessity for that they are expediting the work more rapidly than contemplated, and the money will be needed sooner than was quite supposed?

Secretary DANIELS. That is correct, and it is desirable from every standpoint that the dredging should be completed as soon as possible. (The letter referred to by the chairman follows:)

NAVY DEPARTMENT,
Washington, January 28, 1914.

HON. LEMUEL P. PADGETT,

Chairman Committee on Naval Affairs, House of Representatives.

MY DEAR MR. PADGETT: The naval bill approved March 4, 1911, carried an item of \$507,000 for improvements in Mare Island Strait. Of this total, \$300,000 was appropriated at the time, and the present bill, now before your committee, carries an item of \$207,000 to complete the appropriation.

A contract was let last October for the dredging remaining to be done, at a cost of \$243,000, and this work is now about one-third finished.

The contractor has prosecuted the work so vigorously that the small balance of the amount already appropriated will be exhausted before the amount carried in the present bill becomes available on July 1.

I have, therefore, to request that the appropriation for this purpose in the present bill be made immediately available in order that the work may continue without interruption.

Sincerely, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN. On the question of abolishing the Bureau of Equipment, that has been held up for several years in a state of quasi suspension and the duties have been distributed. Some time since I wrote you a letter asking if you desired to make any further changes other than those in the estimates and I have your letter stating that you did not. That is still your opinion?

Secretary DANIELS. Yes.

The CHAIRMAN. You desire, after the experiment has been tried now for several years, that the Bureau of Equipment may be abolished and the duties distributed as recommended in the estimates?

Secretary DANIELS. Yes.

The CHAIRMAN. I will put that letter in the record.

Secretary DANIELS. I wish you would.

(The letter referred to by the chairman follows:)

NAVY DEPARTMENT,
Washington, December 29, 1913.

HON. LEMUEL P. PADGETT,

Chairman Committee on Naval Affairs.

United States House of Representatives.

MR. DEAR MR. PADGETT: Referring to your recent letters regarding the question of abolishing the Bureau of Equipment, the subject has been under most

careful consideration and has been freely and fully discussed since your first letter of last October.

After careful deliberation I have decided that the elimination of the Bureau of Equipment has been of benefit to the Navy, and I recommend that it be permanently abolished.

The distribution of the duties of the bureau among the several other bureaus has been satisfactory and no change is contemplated.

In regard to your query as to changing the name of the Bureau of Steam Engineering, I have obtained not only the opinions of my aids but of all the bureau chiefs as well. The general consensus of opinion, in which I concur, is that no change in the title of this bureau should be made, but that it should continue as the Bureau of Steam Engineering.

Sincerely, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN. Mr. Secretary, I also have a letter from you of December 23, 1913, relative to the naturalization of aliens who serve one enlistment in the Navy or the Marine Corps, and calling attention to certain embarrassments that arise with reference to their naturalization, and I will include that letter in the hearings.

Secretary DANIELS. I wish you would do so.

(The letter referred to by the chairman follows:)

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, December 23, 1913.

MY DEAR MR. CHAIRMAN: I have the honor to inclose herewith a copy of a letter of this date to the Committee on Naval Affairs of the United States Senate, together with a draft of a bill on the subject of the naturalization of aliens who have served for one enlistment in the Navy or Marine Corps, etc.

These papers are recommended to your favorable consideration and to that of the committee.

Faithfully, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
House of Representatives.

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, December 23, 1913.

MY DEAR MR. CHAIRMAN: The following matter is brought to your attention and to that of the committee, in order that the existing law on the subject of the naturalization of aliens who have served in the Navy or Marine Corps, or in the auxiliary service, may be modified in order to relieve them from a hardship now existing:

The act "to establish a bureau of immigration and naturalization, and to provide for a uniform rule for the naturalization of aliens throughout the United States," approved June 29, 1906 (34 Stat., 596), provides that "an alien may be admitted to become a citizen of the United States in the following manner, and not otherwise," but thereafter makes no provision for the naturalization of persons in the Army, Navy, or Marine Corps. This act, however, does not expressly repeal the laws relating to the naturalization of these special classes, but, on the contrary, it is noted that section 26 of the act, while specifically repealing sections 2165, 2167, 2168, and 2173 of the Revised Statutes, and section 39 of chapter 1012 of the Statutes at Large of the United States for the year 1903, significantly omits section 2166, Revised Statutes, and the act of July 26, 1894, which provide for the naturalization of persons in these branches of the public service.

The omitted section of the Revised Statutes, above referred to, reads as follows:

"SEC. 2166. Any alien, of the age of twenty-one years and upward, who has enlisted, or may enlist, in the Armies of the United States, either the Regular or the Volunteer forces, and has been, or may be hereafter, honorably discharged,

shall be admitted to become a citizen of the United States, upon his petition, without any previous declaration of his intention to become such; and he shall not be required to prove more than one year's residence within the United States previous to his application to become such citizen, and the court admitting such alien shall, in addition to such proof of residence and good moral character, as now provided by law, be satisfied by competent proof of such person's having been honorably discharged from the service of the United States."

The act of July 26, 1894, also above referred to, provides as follows:

"* * * Any alien of the age of twenty-one years and upward who has enlisted or may enlist in the United States Navy or Marine Corps, and has served or may hereafter serve five consecutive years in the United States Navy or one enlistment in the United States Marine Corps, and has been or may hereafter be honorably discharged, shall be admitted to become a citizen of the United States upon his petition without any previous declaration of his intention to become such; and the court admitting such alien shall, in addition to proof of good moral character, be satisfied by competent proof of such person's service in and honorable discharge from the United States Navy or Marine Corps * * *." (28 Stat., 124.)

From a careful consideration of the act of June 29, 1906 (above cited), it is not believed that Congress intended thereby to alter the laws relating to the naturalization of persons in the naval service who are unable, from the very nature of their duties, to acquire a residence on shore without temporarily abandoning the occupation they have selected and, in consequence, forfeiting the standing and financial advantages of continuous service. However, the department has been in receipt of numerous appeals from men of the Navy who are desirous of becoming citizens of the United States, but who state that they have been denied naturalization on the ground that they failed to establish a period of residence on shore as required by the act of June 29, 1906. The hardship resulting from this state of affairs is increased by existing laws and regulations giving additional pay to trained men in the Navy, but providing that "only enlisted men who are citizens of the United States" shall receive such additional compensation.

While the court decisions are not entirely uniform, it is generally held that an enlisted man of the Navy must show continuous residence of one year in the State in which the application is made, must have served five years honorably in the Navy, must submit, in addition to his honorable discharge, proof of good moral character, and then wait 90 days before the papers can be issued. The present law discriminates against these enlisted men, as it requires five years' honorable service in the Navy, whereas one enlistment (which is four years) is required in the Marine Corps, and in the Army it is only necessary to have an honorable discharge from an enlistment of three years.

In this connection attention is further invited to the fact that by regulations the enlistment in the Navy of persons not citizens of the United States is forbidden, although the reenlistment of honorably discharged aliens is still permitted. The enactment of the legislation herein recommended would perfect the endeavor to have only citizens serving on board our vessels of war by making possible the naturalization of practically all the aliens among the enlisted personnel.

With reference to the proof of good moral character, the enlisted man by reason of his duties is generally not in a position to furnish affidavits of two witnesses who can state therein that they have personally known the applicant for five years and can testify to his good moral character during that time, as is required in other cases of petitions for naturalization, and it is believed that the presentation of an honorable discharge, or an ordinary discharge containing a recommendation for reenlistment, would be better evidence, in that it would show that the commissioned officers of the Navy or Marine Corps under whom the man has been serving during four years' time considered him a man of good moral character.

The department submits herewith a draft of a bill which it is believed will accomplish the desired results.

In view of the foregoing considerations, those of public policy, and in the interests of the naval service the draft herewith submitted is commended to your favorable consideration and to that of the committee.

Faithfully, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
United States Senate.

▲ **BILL** To provide for the naturalization of aliens who have served or shall hereafter serve for one enlistment of four years in the United States Navy or Marine Corps, or for four years in the naval auxiliary service.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any alien of the age of twenty-one years and upward who may, under existing law, become a citizen of the United States, who has served or may hereafter serve for one enlistment of not less than four years in the United States Navy or Marine Corps, and who has received therefrom an honorable discharge or an ordinary discharge with recommendation for reenlistment, or who has completed four years of honorable service in the naval auxiliary service, shall be admitted to become a citizen of the United States upon his petition without any previous declaration of his intention to become such, and without proof of residence on shore, and the court admitting such alien shall, in addition to proof of good moral character, be satisfied by competent proof from naval sources of such service: *Provided*, That an honorable discharge from the Navy, Marine Corps, or the naval auxiliary service, or an ordinary discharge with recommendation for reenlistment, shall be accepted as proof of good moral character: *Provided further*, That any court which now has or may hereafter be given jurisdiction to naturalize aliens as citizens of the United States may immediately naturalize any alien applying under and furnishing the proof prescribed by the foregoing provisions.

The CHAIRMAN. Mr. Secretary, there is a provision now with reference to additional pay on second enlistment. That occasions some conflict or trouble with the men proving their naturalization and their citizenship. I have letters from yourself, Mr. Roosevelt, and Admiral Blue, which I will incorporate in the hearings?

Secretary DANIELS. Yes, sir; I would like to have them included. (The letters referred to by the chairman follow:)

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY.

Washington, June 13, 1913.

MY DEAR MR. PADGETT: I have noted with a great deal of satisfaction the introduction by you on June 6, 1913, of House bill 5882, for the relief of certain enlisted men of the Navy. I can not too strongly urge the necessity for speedy action on this bill, as the enlisted men and their families are suffering exceedingly hardships. Especially is this so in the case of the innocent families, as the man is, of course, lodged and fed at Government expense, but there is no relief for the families. Furthermore, it is proving a serious obstacle in the matter of reenlistment of desirable men, as those who have received the increased benefits are fearing that upon their return to the service they will be checked and placed in the same unfortunate position as those who are now in the service.

I submit the following brief history of the trouble and hope that you will kindly make every effort to have this bill acted upon at the earliest possible date:

On November 27, 1906, an Executive order was issued allowing \$5 additional per month for the first reenlistment of a man who was a citizen, last discharged on account of expiration of enlistment, and \$3 additional per month for every reenlistment thereafter. At the time of the issuance of this order any examination into the citizenship of an applicant for enlistment was merely cursory and perfunctory, as citizenship carried with it no monetary consideration, consequently there were thousands of men in the service when the order became effective who had always been carried on the records as citizens who never had occasion to have their status in that particular questioned, and who, by reason of length and character of service, had honestly considered themselves properly carried as citizens. These men were paid monthly additional sums for citizenship without question until in December of 1912, when the comptroller rendered a decision to the effect that the risk of making payments to enlisted men of the Navy under said Executive order rested solely upon the pay officer making them and that it was incumbent upon the pay officer to satisfy himself as to the sufficiency of the evidence of citizenship presented, and that it was his right to refuse making such payments unless, in his judgment, such evidence was legally sufficient. This resulted in the pay officers throughout the service calling upon the men who had received additional pay for citizenship to produce evidence of birth or naturalization, with the result that

hundreds of men who are unable to prove citizenship are being checked. The amount vary, a case having been presented to the department of one Nicholas Tierney, chief boatswain's mate, who was checked \$2,149, and some of the men will have to work many months—possibly years—to make up the amounts they was believed were being rightfully paid them. It is said "rightfully" because the department accepted the affidavits of these men as to citizenship when they enlisted and considered, and does still consider, that its records are the proper basis for such payments. Furthermore, having in mind the act of Congress approved July 28, 1904, providing for the naturalization of aliens who have enlisted in the United States Navy and been honorably discharged after five years' service, it is believed that the foreign-born men who have been in the Navy with honorable service for many years are de facto citizens and have met the spirit, if not the exact letter, of the Executive order. It is possible that a small percentage of the men knowingly swore falsely to being citizens, but as the majority of the men who have profited by the Executive order in question were those who were in the service long before citizenship carried with it financial advantages, this small percentage, if any, need hardly be considered. It is the very men whom the department desired to encourage by the Executive order—the trained men—who are now being checked, and whose families must with them suffer severe deprivations through no misconduct of their own.

Sincerely, yours,

F. D. ROOSEVELT, *Acting Secretary.*

HON. L. P. PADGETT, M. C.,
House of Representatives, Washington, D. C.

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, June 4, 1913.

MY DEAR MR. CHAIRMAN: I desire to invite your attention to a state of affairs relative to the pay of certain enlisted men of the Navy, which I deem of sufficient importance to warrant action by Congress in the way of relief. The facts in the case are as follows:

An Executive order of November 27, 1908, provided as follows:

"To provide adequate compensation for trained men, the pay now prescribed by Executive order for each rating in the Navy is hereby increased \$5 per month during the second period of service and a further sum of \$3 per month during each and every subsequent period of service: *Provided*, That only enlisted men who are citizens of the United States and whose second and subsequent periods of service each follow next after service in the Navy that was terminated by reason of expiration of enlistment shall receive the benefits of the increased pay named herein: *Provided further*, That in the case of men who are or were finally discharged from the Navy by reason of expiration of enlistment, the first enlistment on or after the date of this order shall be considered the second period of service, which shall carry with it the increased pay provided by this order, except that men discharged on recommendations of boards of medical survey shall, if they reenter the service, be given credit for any previous periods of service in the Navy which were terminated by reason of expiration of enlistment."

In the act making appropriations for the naval service approved on May 13, 1908, a provision was contained increasing the pay of all active and retired enlisted men of the Navy by 10 per cent, which increase has been held to apply to the increased pay provided by the Executive order above quoted. (Comp. Dec., May 27, 1908.)

On December 10, 1912, the comptroller rendered a decision which, in effect, placed the risk of making payments to enlisted men of the Navy of the increased pay above referred to upon the pay officer making the payment. As a result of this decision many men throughout the service have been checked various amounts owing to their inability to produce evidence of the fact that they are citizens of the United States, although they may have been carried on the records of the department as citizens of the United States. The difficulty of securing evidence of birth in the United States and, in many cases, evidence of naturalization, is very great, and the desired effect of the Executive order to encourage American citizens to reenlist in the service is more or less vitiated by the necessity of producing evidence of citizenship, and the reenlistment of experienced men will be reduced by reason of this requirement, since

a great many who have already received the additional pay and been discharged will not return for fear of being checked for considerable amounts after they have reenlisted. In some cases this checkage would amount to several hundred dollars and would work a very great hardship on the men checked.

The necessity for confining the benefits of increased pay for reenlistment to citizens of the United States is no longer apparent. On July 1, 1912, only 3.75 per cent of the entire enlisted force were not citizens of the United States, and of this small number a great many were natives of our insular possessions, who, it is believed, should receive every benefit that may be provided in order to encourage reenlistment. With the exception of these natives of our insular possessions and of a very few men of foreign citizenship, who were previously in the service, only citizens of the United States have been enlisted or reenlisted in the Navy since January 5, 1907.

In view of the above facts, the department recommends legislation to provide that hereafter American citizenship shall not be a requirement for the payment to enlisted men in the Navy of the increased pay above referred to, and to provide that any enlisted men of the Navy who did not receive the benefits pertaining to reenlistment, or who received them and were subsequently checked, shall, if such failure or checkage was due to the inability of the men to prove their American citizenship, be entitled to the benefits of the increased pay referred to, provided they were carried on the records of the Navy Department as citizens of the United States during the period in question.

For the convenience of your committee, there is inclosed herewith a form of a bill which, it is believed, would provide such relief as the department considers equitable under the circumstances.

Faithfully, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
House of Representatives.

NAVY DEPARTMENT,
BUREAU OF NAVIGATION,
Washington, D. C., January 30, 1914.

HON. LEMUEL P. PADGETT,
House of Representatives, Washington, D. C.

MY DEAR MR. PADGETT: The bill regarding which I spoke to you yesterday removing citizenship as a requirement for the additional pay provided for reenlistment was introduced by you in the special session June 6, 1913, H. R. bill No. 5882.

I would like to emphasize the importance of this bill to the enlisted personnel of the Navy.

Sincerely yours,

VICTOR BLUE,
Chief of Bureau.

The CHAIRMAN. I have a letter from you, growing out of a matter that was called to your attention by Mr. Stephens, relative to outfits on first enlistment, where there was some trouble growing out of the interpretation of the law relative to furnishing outfits on enlistment. You have written a letter on that subject which I will incorporate in the hearings.

Secretary DANIELS. I wish you would.

(The letter referred to by the chairman follows:)

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, January 7, 1914.

MY DEAR MR. CHAIRMAN: The annual appropriation acts for the naval service, under the Bureau of Navigation, contain a section entitled "Outfits on first enlistment." In this section an appropriation is made for outfits, on first enlistment, not to exceed \$60 each, for all enlisted men and apprentice seamen in the Navy. The Secretary is also authorized to require the whole or a part of the bounty allowed upon enlistment to be refunded in cases where men are discharged during the first year of enlistment by request, for inaptitude, as undesirable, or for disability not incurred in the line of duty.

It frequently happens that men who have been discharged under the law just quoted are again enlisted in the service when the disability that caused their discharge from their first enlistment has been removed. In such cases these men are not serving in their first enlistment and, therefore, under the terms of the present law, are not entitled to a clothing outfit, although they did not profit by this bounty in whole or in part during their first enlistment.

Again, it frequently happens that a man fails to draw the value of the full clothing outfit which has been credited to his account on his first enlistment owing to the fact that his discharge is, for one of the above reasons, brought about prior to the expiration of his enlistment. When these men reenter the service, as frequently happens, they, too, find themselves serving in their second enlistment and are, therefore, not entitled to draw the unexpended balance of the clothing allowance standing to their credit prior to their discharge from their first enlistment.

With a view to overcoming the injustice done these classes of men who have not enjoyed the benefits conferred on others in the service by the issue of a complete clothing outfit the department has drafted and submits herewith a proviso with the recommendation that it be incorporated in the forthcoming appropriation act.

Faithfully yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
House of Representatives.

[An amendment proposed by the Navy Department to the forthcoming naval appropriation act.]

Provided, That the Secretary of the Navy is authorized to issue a clothing outfit to all enlisted men serving in their second enlistment who failed to receive an outfit of the value authorized by law on their first enlistment, or who, having received such outfit, were required to refund its value on account of discharge prior to expiration of enlistment: *Provided further*, That the net cost to the Government of clothing outfits furnished any one enlisted man shall not exceed \$60.

The CHAIRMAN. Here is a letter which relates to the examination of officers who may have two ranks and one grade in the Staff Corps, which I will also incorporate.

Secretary DANIELS. If you please.

(The letter referred to by the chairman follows:)

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, November 13, 1913.

MY DEAR MR. CHAIRMAN: I have the honor to bring the following matter to your attention and to that of the committee in order that the necessary legislation may be enacted to require all officers of the Navy to pass satisfactory physical and professional examinations prior to promotion in grade or rank.

Officers of the line of the Navy are distributed among the various grades, and all officers in the same grade are of the same rank. The law at present provides that no officer shall be promoted to a higher grade on the active list of the Navy until he has been found physically qualified to perform all his duties at sea; and further, that no line officer below the grade of commodore shall be promoted to a higher grade on the active list of the Navy until he has, in addition to the physical examination above referred to, passed a satisfactory mental, moral, and professional examination. Promotions of line officers in grade is synonymous with their promotion in rank, and hence no promotion in rank is made until the officer has satisfactorily passed a physical and professional examination as above provided.

When originally appointed to a Staff Corps of the Navy, officers are commissioned in the lowest grade of the corps to which appointed and in the lowest rank of that grade. The number of officers in the various grades is fixed by law, and promotion to a higher grade can only be made where there is a vacancy in the grade to which the officer is to be promoted, and after such officer has passed a satisfactory physical and professional examination, as in the case of line officers above.

The law further provides that staff officers of the various grades shall be distributed among certain ranks in those grades, as, for example, officers of

the Pay Corps of the grade of paymaster hold the rank of lieutenant commander and lieutenant; officers of the Corps of Civil Engineers in the grade of civil engineer are of the rank of captain, commander, lieutenant commander, lieutenant, and lieutenant (junior grade). As the law fails to provide for any examination prior to promotion of staff officers in rank within the grade in which they are serving, a paymaster once commissioned as a paymaster, with the rank of lieutenant, is promoted to paymaster with the rank of lieutenant commander without any examination whatever, when his "running mate" in the line has, after passing a physical and professional examination, been promoted to a higher grade and rank.

In the case of officers in the Corps of Civil Engineers in the grade of civil engineer, two are of the rank of captain, two of the rank of commander, and the remaining officers in the grade of civil engineer are of the rank of lieutenant commander, lieutenant, or lieutenant (junior grade), such officers being advanced in rank with the line officers with whom they take precedence. Here, again, no examination prior to promotion in rank is required.

Conditions in all staff corps are more or less similar. In the corps of professors of mathematics it is now possible for an officer to pass through the ranks of lieutenant, lieutenant commander, and commander, to captain, covering his entire service from the day he enters to the day he retires, without any examination from time to time (on promotion in rank) to demonstrate his fitness for promotion and his ability in his profession. The department believes such conditions do not tend to keep officers alert in their calling, but, rather, permits an officer, if so inclined, to develop a slothful spirit, which is engendered by the practical certainty of advancement all through life.

Advanced rank, whether or not it carries with it an advance in grade, is a promotion that entails increased responsibility and confers upon the officer an increase in pay and allowances, with consequent greater benefits upon his retirement. The department believes that before an officer receives these benefits he should demonstrate his physical and professional ability to perform the duties of the increased rank, and therefore submits for your consideration the attached draft of an amendment which, it is suggested, might be included in the forthcoming appropriation bill for the naval service. As will be seen, this draft amends sections 1493, 1494, 1496, and 1504 of the Revised Statutes by inserting the words "or rank" after the word "grade." The effect of such legislation will be simply to require all officers, whether of the line or of the staff corps of the Navy, to pass both physical and professional examinations prior to promotion in grade or rank, as is now required where an officer is promoted in grade, when such promotion in grade may or may not carry with it an increased rank.

The enactment of this legislation will not result in any additional expense to the Government, will provide for the elimination of such officers as are subsequently found unfit and who have, under the present system, taken their last examination in their profession, and will not work any hardship on officers who are physically and professionally qualified for promotion.

For the reasons above set forth the enactment of this legislation is recommended to your favorable consideration and to that of the committee.

Faithfully, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
House of Representatives.

[An amendment to the forthcoming naval appropriation bill, recommended by the Navy Department.]

Provided, That sections fourteen hundred and ninety-three, fourteen hundred and ninety-four, fourteen hundred and ninety-six, and fifteen hundred and four of the Revised Statutes of the United States be, and the same are hereby, amended to read as follows:

SEC. 1493. No officer shall be promoted to a higher grade or rank on the active list of the Navy, except in the case provided in the next section, until he has been examined by a board of naval surgeons and pronounced physically qualified to perform all his duties at sea.

SEC. 1494. The provisions of the preceding section shall not exclude from the promotion to which he would otherwise be regularly entitled any officer in whose case such medical board may report that his physical disqualification was occasioned by wounds received in the line of his duty, and that such wounds do

not incapacitate him for other duties in the grade or rank to which he shall be promoted.

SEC. 1496. No line officer below the grade of commodore, and no officer not of the line, shall be promoted to a higher grade or rank on the active list of the Navy until his mental, moral, and professional fitness to perform all his duties at sea have been established to the satisfaction of a board of examining officers appointed by the President.

SEC. 1504. Such examining board shall report their recommendation of any officer for promotion in the following form: "We hereby certify that _____ has the mental, moral, and professional qualifications to perform efficiently all the duties, both at sea and on shore, of the grade (or rank) to which he is to be promoted, and recommend him for promotion."

The CHAIRMAN. Then there is a matter you wrote about relative to the sale of containers. That was called to the attention of the committee, I believe, in the hearings of the Chief of the Bureau of Supplies and Accounts, and you have written a letter which I will incorporate in the hearings.

Secretary DANIELS. If you please.

(The letter referred to by the chairman follows:)

DEPARTMENT OF THE NAVY,
OFFICE OF THE SECRETARY,
Washington, June 3, 1913.

HON. LEMUEL P. PADGETT, M. C.,

*Chairman of the Committee on Naval Affairs,
House of Representatives, Washington, D. C.*

MY DEAR MR. PADGETT: On February 5, 1913, the United States Senate passed a bill, S. 4607, entitled "An act to amend section 3618 of the Revised Statutes of the United States relating to the sale of public property." This bill, in the House of Representatives on February 6, 1912, was referred to the Committee of Public Buildings and Grounds. The same bill, No. H. R. 18233, had been introduced in the House on January 18, 1912, by the chairman of the Committee on Naval Affairs, and was referred to the Committee on Naval Affairs and ordered to be printed. Through the failure of the House of Representatives to take action on either the Senate bill or the bill introduced in the House of Representatives, this act failed to become a law, and it is understood that the bill, as passed by the Senate, died with the close of the Sixty-second Congress.

The bill in question is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section thirty-six hundred and eighteen of the Revised Statutes be, and the same hereby is, amended by adding at the end thereof a proviso as follows:

"*Provided*, That this restriction shall not apply to proceeds received from contractors for bags, reels, barrels, drums, carboys, or other containers used in the delivery of material and returned to them at a price agreed on in the contract, but such proceeds shall be deposited to the credit of the appropriation from which the purchase of the material was made."

The necessity for the enactment of this bill was fully set forth in a communication addressed by my predecessor to the chairman of the Naval Affairs Committee of the Senate, under date of January 15, 1912, as follows:

"Two or three years ago the Bureau of Supplies and Accounts adopted the practice, in advertising for proposals for the furnishing of wire or cable, cement, oil, turpentine, acids, etc., of so preparing the specifications that the price bid should include the value of the reels, bags, barrels, drums, or carboys employed in making deliveries, with the stipulation that should these containers be returned to him within a prescribed period the bidder should make refund to the Government therefor at the rate named in his proposal.

"This practice was adopted in order to conform to commercial usage and to insure contractors against loss of the containers. It resulted, it is believed, in securing more favorable bids, besides affording the simplest method of accounting for the containers. In adopting this plan it was intended to pay for the containers from the appropriation from which the material itself was bought, and when reimbursement was received for them to credit the appropri-

tion concerned with the amount thereof, the appropriation paying in such case only the net cost of the material purchased.

"The accounting officers of the Treasury have decided, however, that payments received for containers so returned can not properly be credited to the appropriations from which they were bought, but must be turned into the Treasury as miscellaneous receipts, under section 3618 of the Revised Statutes. This section reads:

"All proceeds of sales of old material, condemned stores supplies, or other public property of any kind, except the proceeds of the sale or leasing of marine hospitals, or of the sales of revenue cutters, or of the sales of commissary stores to the officers and enlisted men of the Army, or of materials, stores, or supplies sold to officers and soldiers of the Army, or of the sale of condemned Navy clothing, or of sales of materials, stores, or supplies to any exploring or surveying expedition authorized by law, shall be deposited and covered into the Treasury as miscellaneous receipts on account of "proceeds of Government property," and shall not be withdrawn or applied except in consequence of a subsequent appropriation made by law."

"Accordingly, if the commercial practice should, as is desirable, continue to be followed, naval appropriations would lose the value of the containers for which reimbursement might be made upon their return to the contractors. This loss would be considerable; in the case of cement it would amount to from 30 to 40 per cent of the net value of the material. To avoid this loss to naval funds it is necessary to depart from commercial usage and specify, in inviting bids, that containers shall remain the property of the contractor, to be returned to him when empty and within a stipulated time, the Government to keep and pay for such only as are not so returned. This plan is, however, unsatisfactory to many desirable bidders, and it entails additional work in the accounting department of the navy yards where the material is handled.

"It is the endeavor in the purchase of naval supplies to conform wherever possible with commercial practice, as by so doing competition is increased and better prices secured. In order that, in this instance, such practice may be followed without loss to the appropriations concerned, I have the honor to recommend that section 3618 of the Revised Statutes be so amended as to permit funds received from contractors, in reimbursement for containers returned to them, to be credited to the appropriation from which the material was purchased, where the contract provides for the return of the containers at an agreed price. For the convenience of the committee the draft of a bill that it is believed will, if enacted, accomplish the desired end is inclosed herewith."

I earnestly request that the bill mentioned be again introduced and that its enactment into law be secured as early as possible.

Sincerely, yours,

F. D. ROOSEVELT,
Acting Secretary.

Secretary DANIELS. We are introducing at the War College a correspondence course for the officers who can not go there, and we wish to use some of the money for the correspondence course.

Mr. ROBERTS. Will that increase the appropriation?

Secretary DANIELS. Not at all.

The CHAIRMAN. I have a letter from you, Mr. Secretary, concerning that matter, which I will insert in the hearings.

Secretary DANIELS. I wish you would.

(The letter referred to by the chairman follows:)

NAVY DEPARTMENT,
Washington, January 19, 1914.

MY DEAR MR. CHAIRMAN: Because of duty assigned, many officers of the Navy have been denied the opportunity of attending the War College course and, therefore, until such time as it may be practicable for them to be so detailed, both they and the department will, in a measure, be handicapped through their limited knowledge of the special subjects in which instruction is given. To relieve this situation, in a greater or less degree, the department has decided to establish a sort of correspondence school at the War College, which, obviously, will broaden its field of usefulness very materially by enabling it to impart special instruction to those officers on distant stations or aboard

ship, who, through service conditions, may not now be able to attend the regular course.

This school will naturally entail much additional work upon the War College; much more, in fact, than the present force will be able to cope with, and in order that everything in connection with it may run along smoothly and efficiently a small increase in the force will be essential. I am glad to say, however, that this can be done without the appropriation of additional funds, but merely by increasing the maximum amount which may now be spent out of the appropriation for the maintenance of the War College for clerical services. This maximum amount is now fixed at \$10,250, and it is desired to increase it by \$2,250, or to an even \$12,500.

I earnestly hope that the committee will make this change, which, as I said before, involves no increase in the total of the appropriation.

Provision for the War College appears on pages 25 and 26 of draft No. 1 of the committee's draft of the naval appropriation bill.

Very sincerely,

JOSEPHUS DANIELS.

Hon. L. P. PADGETT, M. C.,

*Chairman Committee on Naval Affairs,
House of Representatives.*

The CHAIRMAN. You have sent down a supplemental estimate relative to St. Helena?

Secretary DANIELS. That is quite an important matter.

The CHAIRMAN. I will incorporate it in the hearings?

Secretary DANIELS. I will thank you to do so, for I most earnestly urge that appropriation. The buildings at St. Helena were built most inexpensively and are inadequate. Improving quarters is not desired, but these buildings are necessary, as I learned after two visits to the place.

The letter referred to by the chairman follows:

NAVY DEPARTMENT,
Washington, December 18, 1913.

MY DEAR MR. PADGETT: I am to-day forwarding to the Secretary of the Treasury supplemental estimates, as follows:

Public Works, Bureau of Yards and Docks, Navy Yard, Norfolk, Va.:

Repairs, buildings, St. Helena.....	\$25,000
New school and armory, St. Helena.....	50,000

In all	75,000
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The first item you will recognize as one which has appeared in all naval appropriation acts since the one of June 20, 1906. It was inadvertently stricken out when the estimates were being considered by the department, and I earnestly wish to get it back. The work they have accomplished at St. Helena with the comparatively small sums they have received each year is really marvelous. With the exception of this annual appropriation they have been receiving the station has been practically self-supporting, i. e., it has been maintained by the enlisted force attached to the receiving ship and the recruits themselves. Some of the more important work which has been completed in this manner is as follows:

1. Granolithic sidewalks throughout the station, much of which was laid on cement piers.
2. Ice-making plant, cement building with a capacity of 4 tons a day, built by the ship's force.
3. Fire-protection service, fire hydrants, frame houses for apparatus, etc.
4. Drains for sanitation, all done by enlisted force.
5. Improvements of grounds, such as grading, planting trees, sodding, etc., most of which was performed as extra duty as a punishment.
6. Extension of salt-water mains for toilets, etc., to replace the expense of purchasing fresh water from the city mains; entirely performed by ship's force.
7. Construction of a mess hall.
8. Construction of a cement swimming pool.

9. Sanitary butcher shops, rubbish incinerator, screening for the buildings, lockers for rifles, receiving barracks for newcomers, coal shed at the detention barracks.

During the ensuing fiscal year it is proposed to carry out several other desirable and necessary projects, make repairs to present structures, and to further generally improve conditions, and the department earnestly recommends that the funds be provided for so doing.

The second item covers a proposed new school and armory building, which it is not possible to erect out of the small annual appropriation. The preliminary plans call for a two-story structure, the first floor to be used as an armory, wet-weather drill hall, recreation hall, and hall for the Swedish exercises; and the second for schoolrooms, lecture rooms, and offices necessary for the administration of the school.

At present there are only improvised schoolrooms at the station, of very unsatisfactory character, widely separated, and, in some instances, with insufficient natural light. There is no wet-weather drill hall, and outdoor drills must be suspended during rains. The only place available for the Swedish drills is the second floor of the apprentice seamen mess hall at the detention camp, and the department is averse to using that hall for the purpose, as doing so in a measure destroys the purpose for which the detention camp was formed and prevents the complete isolation of the detentioners. Such a course would also render more liable the introduction of diseases from the detention to the main camp.

The educational work being carried on at St. Helena is regarded as of very great importance to the service. The facilities are sadly inadequate and the department strongly urges that funds be provided for this proposed new school and armory.

Very sincerely,

JOSEPHUS DANIELS.

HON. L. P. PADGETT, M. C.,
Chairman Committee on Naval Affairs,
House of Representatives, Washington.

MR. BROWNING. Mr. Chairman, have you had any communication from the Secretary or the Assistant Secretary relative to an increase for the trade instructors at the Naval Academy?

THE CHAIRMAN. No.

MR. BROWNING. I have a letter from the president of the National League of Government Employees, and I have also a letter from the governor of Maryland, asking us to carefully consider this proposition. One of the letters states that this matter has been favorably acted upon by the Assistant Secretary. I did not know whether the Secretary had taken any action.

SECRETARY DANIELS. No.

THE CHAIRMAN. They spoke to me, and I said that the committee would probably not take up the question of the increase of any salaries on the appropriation bill at this session. I might state with reference to this matter that a year or two ago those men came before the committee and asked to be changed from a per diem to a per annum basis, stating that they preferred to be upon the per annum basis, as it would give them the annual leave, holidays, etc. In the adjusting there was a small loss in some of the salaries, and they stated that they preferred to suffer that loss and get the other benefits rather than to remain on the per diem basis, and the committee granted what they wanted.

MR. BROWNING. I did not want to bring that matter up at the present time; but while you were putting those letters in the record, I wanted to know whether the Assistant Secretary had written you.

THE CHAIRMAN. No.

Mr. BUCHANAN. Mr. Secretary, as long as this matter has come up, I understand that there has been a recommendation included in your report to increase the compensation of the men at Annapolis.

Secretary DANIELS. At Annapolis?

Mr. BUCHANAN. Yes.

Secretary DANIELS. I do not recollect anything about that.

The CHAIRMAN. There was no increase at the Naval Academy.

Mr. TALBOTT. None was recommended.

The CHAIRMAN. Nothing was in the estimates at all.

Mr. BUCHANAN. It seems that these trade instructors at the Academy had an understanding that this increase would be given them. They are doing work that is of a great deal of importance for less pay by working on the per annum basis.

Mr. TALBOTT. One is losing about \$72 a year.

Mr. BUCHANAN. I have here a statement, and the salary being paid the machinist is \$1,800 a year.

Secretary DANIELS. They had a hearing about that matter before the Assistant Secretary.

Mr. BUCHANAN. At the hearing, it seems that Mr. Roosevelt, the Assistant Secretary, was convinced that their claim was just—at least, they seem to have been left under that impression. Do you know, Mr. Secretary, whether or not the Superintendent of the Naval Academy recommended an increase of pay to the men in the departments of marine engineering, naval construction, and electricity?

Secretary DANIELS. I do not recollect about that. I will take the matter up.

Mr. ROBERTS. As I understand the gist of this proposition, these men are termed trade instructors, and they are really filling the position of trade instructor at the academy?

Secretary DANIELS. Yes.

Mr. ROBERTS. Their complaint is twofold, as I understand it. First, that by the change from the per diem to the per annum basis they have lost anywhere from twenty-one to seventy-odd dollars a year in their compensation, and second, that it is the practice and custom in the public schools and in trade schools to have a wage scale for the instructor based somewhat on length of service. In other words, there is an opportunity for increased pay from year to year up to a certain maximum pay, while with these men at Annapolis there is no such opportunity, their pay is fixed at the low rate from year to year, and there is no opportunity whatever for any of those men to receive an increase. That, as I understand, is one of the things they have in mind. I am advised that the Superintendent of the Academy, the Chief of the Bureau of Navigation, and the Assistant Secretary have all given a favorable recommendation?

Secretary DANIELS. I do not know; I will look into that.

Mr. ROBERTS. It would seem to me that if we are establishing what in effect is a body or corps of instructors that we ought to treat them as similar employees would be treated by school authorities and provide for some increase in their pay based on the length of time they have been employed, so that there would be an opportunity for advance.

Secretary DANIELS. I will look into that.

Mr. BROWNING. Are the salaries of the trade instructors fixed by Congress?

Secretary DANIELS. That is my understanding.

Mr. BUCHANAN. I understand that this increase will amount to about \$3,000. The minimum salaries paid by the schools and universities is \$1,200. It runs from that up to \$2,500. They are promoted from one time to another. I see here that they are paid as low as \$1,080 at the academy. I am also informed that the cost of living in that community is possibly higher than in Washington. Take a trade instructor; it seems to me that it is a reflection upon any department of this Government to pay a man who is able to instruct, an educator in this line, \$1,080 a year.

Secretary DANIELS. I did not know what they were paid.

Mr. BUCHANAN. That is the pay of the machinist. Coppersmith, molder instructor, etc., \$1,080. You should have the very best mechanics in those lines, and if you have the best that is not an adequate salary.

Mr. ROBERTS. Are they master coppersmiths and machinists?

Mr. BUCHANAN. They are supposed to be. Pattern maker, first class, \$1,200; boiler maker, first class, \$1,080.

Mr. ROBERTS. Are these men supposed to have such intelligence, experience, and ability as the master mechanics in the yards?

Mr. BUCHANAN. I think so. The instructors should have.

Mr. ROBERTS. Most of the men in the yards get from \$5 a day up to \$7 or \$8, which would bring their compensation up to \$1,500 to \$2,300 a year.

Mr. BUCHANAN. There is no doubt in my mind that these people are entitled to what they are asking for. They are very moderate about their request.

Mr. ROBERTS. Do these men instruct the midshipmen?

Mr. BUCHANAN. That is my information, and they should be the ablest workmen in their class.

The CHAIRMAN. Two or three years ago, as I stated awhile ago, these men met and themselves formulated this plan and this basis of compensation and asked that they be taken from the per diem roll. They were getting per diem pay and had no permanent status, and in order to get a permanent status they asked to be transferred to the per annum roll, and we granted their request and fixed the per annum pay at what they asked. They then called attention to the fact that they were giving up the difference between the total of the per diem if they worked every day in the year and what they were fixing it at on a per annum basis and said that they were fixing it lower than the per diem, but said that they would get these other benefits which they preferred, and we accepted their recommendation and fixed it as they requested.

Mr. WILLIAMS. At that time did they know that it would result in this reduction?

The CHAIRMAN. Yes; and called attention to why we should do it.

Mr. BUCHANAN. They informed me that the reduction amounts to \$21.76 minimum and \$71.84 maximum. It does not seem to me that anyone who is willing to return full pay for their services would say that that was enough for the men who work under the conditions existing there.

Secretary DANIELS. My recollection is that they did have a hearing before the Assistant Secretary, and I will see him about it and get the hearing and make a recommendation.

The following increases were recommended by the Superintendent of the Naval Academy under the Department of Marine Engineering and Naval Construction:

1 master machinist from \$1,800 to \$2,000	\$200
1 assistant from \$1,200 to \$1,800	100
1 patternmaker from \$1,200 to \$1,800	100
1 boiler maker, 1 blacksmith, 8 machinists, 1 molder, and 1 cooper-smith (7 employees) from \$1,000 each to \$1,200 each, \$7,500 to \$8,400	840
Machinists and other employees from \$6,768 to \$7,645	877
Total increase recommended	2,117

The grounds given by the superintendent for recommending the above increases were:

"That the cost of living for these men is higher in Annapolis than in either Washington or Baltimore, and this has increased materially in recent years.

"These men are required to perform duties in their ratings (and oftentimes outside of their ratings) of a comparatively high order, i. e., practical instruction of midshipmen, and they are particularly well-qualified men for this duty.

"The pattern maker, boiler maker, blacksmith, molder, cooper-smith, and three machinists, first class, suffered a reduction in their pay in 1911, which was an unfortunate circumstance meriting remedy."

The following increases were recommended by the Superintendent under the Department of Electrical Engineering:

1 electrical machinist from \$1,000 to \$1,200, \$200.

Total increase recommended under this department, \$200.

The grounds given by the superintendent for recommending the above increase were:

"The electrical machinist in question is the leading civilian assistant in the department, and in that capacity his duties are varied and require a rather high order of skill and resourcefulness; his duties include the setting up and keeping in order of all apparatus received in the electrical laboratory, the care of all stores and items carried on the property account, assisting the instructors in setting up apparatus for the practical instruction of midshipmen, constructing such apparatus as can be done in the workshop.

"He has been in the employ of the Government 13½ years, and has served in the department 6 years at his present rate of pay.

"The leading machinist and pattern maker in the department of marine engineering each receive \$1,200 per year, and it is submitted that an equally high order of skill is required from the electrical machinist in this department."

The Bureau of Navigation did not look with favor or recommend these increases. The department on January 17, 1914, approved a schedule of wages for the Naval Academy for the calendar year 1914, the total per annum increase involved therein being about \$5,634.

In connection with this new wage schedule, the department called upon the superintendent of the academy to advise if it would be necessary to make any reduction in the force before July 1 of this year on account of shortage of funds, and also to report whether or not a reduction in the force after July 1, 1914, would be necessary on account of the smaller appropriations estimated for under "Current and miscellaneous expenses, Naval Academy" (\$10,000) and "Maintenance and repairs, Naval Academy" (\$75,000). I have with me the replies of the superintendent to these interrogatories, in which he states that no reduction in the force will have to be made before July 1, 1914, but that if the appropriation "Maintenance and repairs, Naval Academy," is reduced by \$75,000, as recommended by the department, as nearly as can be estimated the average number of men employed will have to be in the neighborhood of 50 less than the average number for the current fiscal year.

Whether or not these men are adequately compensated is a question on which we may all entertain different views. Each man for whom an increase was recommended may be very deserving, but their cases are in no way dissimilar from many others, not only in my department but no doubt in many of the others, for whom no increases have been asked as a measure of economy. I

believe in meritorious advancement. It puts a quietus on justifiable discontent, resulting in better work and closer application on the part of the recipient. I have asked for no salary increases, though, not only in this bill but, with two or three exceptions, in the legislative bill as well, my policy having been to keep the estimates for all branches of the service to the lowest possible figure.

I have been asked whether it is the practice of schools, colleges, and universities to establish a minimum rate for trade instructors, and that from year to year their salary is increased until they arrive at the maximum amount, and also what is the practice at the Naval Academy.

I am without authentic information as to the practice obtaining at civil schools and colleges as to compensating trade instructors. The practice at the Naval Academy is similar to that obtaining in all branches of the service where positions are specifically appropriated for; that is to say, promotions come as the result of vacancies occurring in the higher grades, through death, discharge, resignation, demotion, or as the result of increases provided in appropriation bills.

As to whether some consideration should not be given those trade instructors who several years ago lost from \$21 to \$76 per year when their rating was changed from per annum to per diem, it would seem unjust to demote an employee actually deserving of advancement, no matter what occasioned the reduction. I am informed, however, that in the readjustment of ratings in appropriation bills from time to time it has frequently resulted in the demotion of some employees. In other cases it has resulted in a slight advance.

The CHAIRMAN. Is there any other matter, Mr. Secretary, which you desire to call to our attention?

Secretary DANIELS. I would like to call attention to the recommendation that you will find for the utilization of what we have called, for the want of a better name, welfare secretaries.

Mr. WILLIAMS. Deputy chaplains?

Secretary DANIELS. I think it is a reproach to the country that we have in all the Navy only 24 chaplains, and I think the number should be increased. I would not like to make a recommendation about these welfare secretaries that would appear to prevent an increase of chaplains. If the matter were an entirely new one, I would not advise any rank for chaplains or any other religious officers or workers; but it is a condition, and having had this rank a long time, I do not wish to make any recommendation for a change. I think there is very great need on our ships of young men—young men who are interested in religion and what you call social welfare and athletics. I think if you increase the chaplains moderately and give us an opportunity to test out what I believe will work well, the employment of these young men, just as we have them in the several churches or in the organizations, that they would get hold of the young men and create really a better feeling and spirit on the ships.

Mr. ROBERTS. You mean the young chaplains?

Secretary DANIELS. I am saying that, in addition to the chaplains, we should have these young welfare secretaries. For example, my theory is that a chaplain grows old, and as he grows old he is not so able to interest and get in touch with the young fellows as the young men would be. I would be opposed to adding any permanent staff or giving any status or promotion for any length of service. These young men should be employed, the chaplains having the general direction. For example, in a division of four ships I would have a chaplain in charge of the men, and he would look out for their religious guidance; but I would put a young man on each of the other ships in the division, and they would teach the Bible classes and would lead in the religious activities and help in

the educational activities. I think that would greatly improve the Navy.

Mr. ROBERTS. Have you any recommendation to make, Mr. Secretary, if we increase the number of the chaplains, as to the rank and pay that we shall start them at?

Secretary DANIELS. I should say, start them at the present rate.

Mr. ROBERTS. If you will recall the bill now before the committee, it starts them at the pay of a lieutenant, senior grade, at \$2,000 now, and this starts them at \$2,400, if I am correct, and if this bill becomes a law they will begin their service with the \$400 additional compensation.

Secretary DANIELS. I would say that I would not change the present law about that.

Mr. ROBERTS. What recommendation, if any, would you make with regard to giving chaplains in the grade of commander and captain the pay of commander and captain, respectively?

Secretary DANIELS. They do get that pay, do they not?

Mr. ROBERTS. Their pay stops at lieutenant commander. As I interpret the law, they can go up to the rank of commander and captain, and yet by law their pay does not go beyond that of lieutenant commander?

Secretary DANIELS. I think if they have the rank they should have the pay.

Mr. ROBERTS. As I understand the law—I may be wrong about that—after the chaplains who have the pay of lieutenant commander have retired from the service by death or retirement, then the rank stops. I may not be right, but that is my understanding. In other words, we provided a few years ago for the discontinuance of the high ranks of chaplain and at that time cut the pay, as I understand the law. With that understanding, do you think that if we increased the corps of chaplains that we should provide the grades of commander and captain?

Secretary DANIELS. If you give to them the rank of captain, they ought to get the same pay.

Mr. ROBERTS. The pay should go with the rank?

Secretary DANIELS. Yes.

Mr. ROBERTS. They should not have higher rank than pay?

Secretary DANIELS. You should let the pay go with the rank.

Mr. ROBERTS. Under the present law, with the rank of lieutenant commander the maximum pay on shore is \$4,000. That, I understand, will be the maximum pay after the older chaplains who have the rank of lieutenant commander retire.

The CHAIRMAN. And on sea it is \$4,400. They get about \$1,000 in allowances, so that the pay of a lieutenant commander runs up to not less than \$5,000 a year.

Mr. ROBERTS. They do not get the allowances on sea.

The CHAIRMAN. No; they get \$4,400 at sea, but at sea they are furnished their living.

Secretary DANIELS. Officers at sea are not furnished their living.

Mr. ROBERTS. Mr. Secretary, if it were possible for you to have your choice of only one of the suggestions made, the chaplains or the welfare secretaries, which would you recommend to the committee?

Secretary DANIELS. I would recommend that you add 12 chaplains instead of 24 and cut the number of welfare secretaries recommended in half.

Mr. ROBERTS. That does not answer my question. We may be brought down to that very alternative ourselves.

Secretary DANIELS. Of course I would not wish to put the welfare secretary in the same class with the chaplain. He can not administer the communion and he can not bury the dead and perform the holy offices that a chaplain performs, nor would I wish to recommend anything that would put him in the same class with the chaplains, but I suppose you would not want to very largely increase this appropriation. For \$2,000 you can put a welfare secretary on a ship if you have a chaplain in the division, and he will do everything except perform the holy offices; and in the matter of studying, Bible classes, and those things, he will do them really even better under the chaplain's guidance than the older chaplains.

Mr. ROBERTS. Would we not have a very anomalous condition aboard ship if we put a welfare secretary on a vessel and he had no pensionable status, no position aboard ship, except of a mere civilian; no rank and no retirement?

Secretary DANIELS. If I had my way I would have the chaplain with no rank except that of his holy office. If you had a man who was a success and whose standing was dependent on his getting the young men interested, I think it would be better.

Mr. ROBERTS. What are you going to do with the welfare secretary on the ship? If we allow \$2,000, that would command the services of a man of pretty good education?

Secretary DANIELS. Of course.

Mr. ROBERTS. Not a mere laboring man?

Secretary DANIELS. He would be a man specially trained for the work.

Mr. ROBERTS. Where are you going to mess him, in the wardroom or with the crew?

Secretary DANIELS. I have not gone into all that.

Mr. ROBERTS. You must recognize this distinction aboard ship, that the way a man is treated aboard ship determines in a large measure his status and influence with the crew?

Secretary DANIELS. I think his status and influence with the crew depends on the man himself. I think personality is the dominating influence. Unless you get the right kind of a young man, who is interested in the men, in the education of the men, and who keeps in touch with them, I think he would be a failure.

Mr. ROBERTS. You do not recommend any increase of the chaplain corps of more than 12?

Secretary DANIELS. If you give us the welfare secretaries.

Mr. ROBERTS. Suppose we do not give you the welfare secretaries.

Secretary DANIELS. Then I think they should be doubled.

Mr. ROBERTS. The number of chaplains?

Secretary DANIELS. Yes.

Mr. ROBERTS. Do you favor the proposition of the chaplains bearing the relation of 1 to 1,000 of the enlisted personnel?

Secretary DANIELS. I do not think that we should have that number now.

Mr. TALBOTT. Of course, Mr. Secretary, you would not bar a young ordained minister from being a welfare secretary?

Secretary DANIELS. If he were an ordained minister, I would not bar him, but I would prefer that he should not be. The chaplain,

who is in the division or squadron, would be the man who would perform the holy offices.

Mr. TALBOTT. If the young ordained minister is not barred, you will find plenty of young men with all the necessary qualifications that will want to go into the service.

Secretary DANIELS. My idea about it is this: As I have gone about the ships I have seen the need, the real need, of young men on the ships whose whole aim should be trying to lift the men up.

Mr. BROWNING. I think it was Bishop Lawrence, of Massachusetts, who made the suggestion that the chaplain could select from those on board the ship young men to do this very work that you are speaking of?

Secretary DANIELS. He told me that, and I said to him, "That is true, but the chaplains heretofore have not gotten many, and I think, with the help of welfare secretaries, more young men on the ships could be brought into this work."

Mr. ROBERTS. They have gotten some?

Secretary DANIELS. Yes; but, as a rule, the difficulty is that the chaplain as he grows old is not in close touch with the boys, and most of our sailors are boys. I believe that in this work the young man would help us tremendously in the educational policy. I do not want him to have any status and I do not want him to have any pensionable rights. I do not expect him to stay permanently.

The CHAIRMAN. Mr. Secretary, assuming that you have a young man 21 years of age and that he is an ideal man to do your work and he starts in with the young men and he is a success and continues until he is 40 years of age, and then he gets to that condition that you describe, he is getting too old, is not in touch with the young men, what would you do with such a man?

Secretary DANIELS. Let him go back to civil life.

The CHAIRMAN. Have we ever been able to do that in any Government service? Where would he go? He has reached the age where he is beyond going into any profession or any calling. How would we get rid of him?

Mr. WITHERSPOON. Put him on the retired list with increased pay!

Secretary DANIELS. I would not expect the young welfare secretary in the Navy to stay very long. I would not expect to keep a man in the service very many years. I recognize the danger of the question you submit, but I think that we should go into this, should try it. I would take the man on the recommendation of the people in his church, and I would expect to have some young men of all the churches, and if they did not make good, they would not be retained. If they did make good, after they had been in 10 years, I would want them to go back to something else and get fresh young men.

The CHAIRMAN. If you had a young man and he was making good and continued to make good and wanted to stay, was enamored with his work, would you put him out before he reached the stage that he was not making good?

Secretary DANIELS. I would recommend that we start them in at \$2,000, and that we give them the advantage of promotion to \$2,500.

The CHAIRMAN. Well, this young man goes in and makes good and reaches \$2,500 and he reaches that age where we all recognize that he is too old to go into some other profession and where he is not making

as good as if you had him at 20 years, how are you going to get rid of him?

Secretary DANIELS. He will be the only man employed afloat who has not any rank or any claim, and he will go in with the understanding that he is to try to do a particular class of work for the young men. No doubt you would have a few cases that would trouble you a great deal, but if I had control I would say that we do not want any man in the service except for a few years.

Mr. ROBERTS. Would these secretaries wear a uniform?

Secretary DANIELS. I would say no.

Mr. WILLIAMS. If these young men were graduates of a theological seminary or young clergymen, would not they have more influence and greater prestige with the young men of the Navy?

Secretary DANIELS. My theory is this, that they would not. If you have only the chaplain, what we would call a minister of the Gospel, the young men go to him only as a preacher. I want these young men to be in touch with the boys as comrades, to play and associate with them, not a preacher.

Mr. WILLIAMS. What would be the duties in the way of religious training and exercises?

Secretary DANIELS. I should think that ought to be a matter of development.

Mr. HENSLEY. Under the chaplain?

Secretary DANIELS. Yes. If you had the chaplain on the *Wyoming* and three welfare secretaries on the other three ships of the division, the chaplain would work out the plan. The chaplain would stay on the *Wyoming* three months and would then be transferred and go to the *North Dakota* or one of the other ships. When enlisted men become interested in Bible study and capable of teaching it is possible that we might develop them into welfare secretaries. I should look forward to that ideal.

Mr. TALBOTT. And when you got through with the young man he would go back to his organization. For instance, the cardinal would take care of the young priest, the Methodist conference to which he belonged would take care of their men, and the Lutheran synod would take care of their men, and in that way you would not have the fellow on your hands with nothing to do.

Mr. ESTOPINAL. After they are 40 years they would be retired without pay?

Secretary DANIELS. Suppose you would do that with the chaplains? My theory is that you want a man in this position who has no status. The success of the experiment will, of course, depend very largely upon the man himself. If you can get the right kind of young men on the ships, it will be the greatest thing in the world you can do for the Navy, and it will be of the greatest help for the chaplains. It will be similar to the work which some young men do in many of the churches, where they have young men who engage in all the activities of the church, and who are of very great assistance to the pastors.

Mr. ESTOPINAL. They can be of great assistance to the chaplains, and when they reach the age of 40 years you can retire them.

Secretary DANIELS. I think that might solve the matter. They might serve in a grade similar so that of lieutenant or junior lieutenant until they are 40 years of age, and then be retired.

Mr. ESTOPINAL. Along that line, do you not find the young chaplains doing all the things which a welfare secretary would do?

Secretary DANIELS. You will find most of them very efficient. You will find them interested in athletics and interested in all the sports in which the men are interested, interested in all sorts of study, but the welfare secretary would not be a preacher. He would be the right arm of the chaplain.

Mr. ESTOPINAL. One who is not entirely absorbed with religion and spiritual matters, but, as a rule, an active young man.

The CHAIRMAN. Do not most of them take an interest in those things?

Secretary DANIELS. Most of them do. This would be an experiment. It need not be made permanent if it did not work well. But I am firmly convinced that it is the biggest thing you could do for the young men in the Navy. It would be a movement which would help to lift up the tone of the ship and get the young men interested in higher things.

Mr. BATHRICK. Mr. Secretary, I would like to ask you one or two questions. In connection with the services on board battleships, have you thought of the possibility, owing to the varied religious proclivities of the men, that the services should be nonsectarian in character?

Secretary DANIELS. You mean the services conducted by the chaplains?

Mr. BATHRICK. Yes.

Secretary DANIELS. I think those services—I think our chaplains always conduct those services with that in mind, no matter what faith or creed the men may believe in or belong to. The chaplains, as I understand it, conduct their services in a way so that any young man may attend, whether of the particular faith as the chaplain or not.

Mr. BATHRICK. That is sufficient on that subject so far as I am concerned.

I have noticed that you have instituted on board ships a system of education for the enlisted men in the Navy, which I am pleased to note.

Secretary DANIELS. You brought it up last year.

Mr. BATHRICK. You have established classes and training stations?

Secretary DANIELS. Yes.

Mr. BATHRICK. Have you put into vogue an actual system of instruction on the battleships, with certain hours for instructions?

Secretary DANIELS. Yes.

Mr. BATHRICK. You have also established a regular system of assistance in the matter of instructing these enlisted men on board the ships?

Secretary DANIELS. Yes. The young officers must teach spelling and arithmetic and grammar and geography.

Mr. BATHRICK. And you say they have regular hours and regular times when they are thus engaged; or is it left entirely to the voluntary assistance of the officers?

Secretary DANIELS. No; they have to go to school. For the first two years a man is in the service he must study these lessons.

Mr. BATHRICK. I desire to compliment you very heartily on that movement.

Mr. ROBERTS. Did I understand you to say that every enlisted man during the first two years he is in the service must attend these schools or classes on board ship and study arithmetic and these other hundred subjects to which you have referred?

Secretary DANIELS. Yes.

Mr. ROBERTS. Suppose he is a high-school graduate?

Secretary DANIELS. Then we have advanced classes in the subjects which he pursued at the high school and which will advance him along the line he has already studied.

If, for instance, he has mastered arithmetic, he is given algebra. We have classes along the lines of his needs. Those who are high-school graduates are chiefly instructed in those subjects in which they will be examined when they come up for promotion. They are expecting promotion, and they are instructed in the subjects in which they will be required to pass examinations.

Mr. BATHRICK. I think you are doing a great work for the Navy and the country in carrying on that movement.

Secretary DANIELS. It is proposed to make the welfare secretaries a part of that system, and they will be worth a great deal in helping us.

Mr. BATHRICK. It has been stated, and I think it is true, that we are short of officers in our Navy; that we have not enough officers to man all the ships.

Secretary DANIELS. Yes; we need more officers.

Mr. BATHRICK. We have, in the history of our country, raised from among the ranks of the enlisted men to high positions many worthy men, have we not?

Secretary DANIELS. Not enough.

Mr. BATHRICK. Not enough of them. Your propaganda will assist in that work.

Secretary DANIELS. That is one of the objects of it.

Mr. BATHRICK. I think it will, very much.

I want to call your attention to a bill, which I do not desire to discuss now, because I am not ready to discuss it at this time; it is H. R. 12471. It provides for a more rapid advancement on merit absolutely of enlisted men, and if they can pass the usual entrance examination a certain number of them each year are taken from that list and put into the Naval Academy in Annapolis.

Secretary DANIELS. I think that is very desirable.

Mr. BATHRICK. I would like to have you look at that bill, and later on I desire to confer with you on the subject.

Secretary DANIELS. I should like to look at it, and I should be very glad to confer with you in regard to it.

Mr. ROBERTS. I would like to go back for a moment to the question of welfare secretaries. I had not finished the line of questions I was asking you in regard to that.

I understood you to say these secretaries would not be in uniform?

Secretary DANIELS. That is my idea.

Mr. ROBERTS. I suppose you know the feeling of the ordinary sailorman toward the civilian or "landlubber"?

As a rule the sailorman has a hearty contempt for the landlubber. Do you imagine that a man on board ship in the position of welfare secretary not in uniform, with no rank, would be in a position to

get the confidence of the sailormen? You recognize he must have their confidence?

Secretary DANIELS. I think that is the very way to get it. That is the reason I am advocating it. I believe he would get in close touch with the men. They know he has no authority except the authority of leadership and help. I think if a man has the right spirit, if he is the right sort of man, he will get in touch with these sailormen in a way that no other man could.

Mr. BATHRICK. And gain their confidence more quickly than if he were an officer?

Secretary DANIELS. Yes. In the work we want him to do he is not to teach them military subjects. He is to be the comrade and friend of these men and help them along in their studies and in their athletics and religious life.

Mr. ROBERTS. My idea is that until you change the attitude of the men in the Navy your idea in regard to that is wrong.

Secretary DANIELS. Suppose you are right in that regard? We can try this for two years, and then if it seems not to work well we can stop it. I believe there is in it a germ of a revolution for uplift in the Navy which will justify the making of the experiment.

The CHAIRMAN. Mr. Secretary, we have 24 chaplains in the Navy, and we requested Admiral Blue to state their present disposition, and you have it there, I believe, in his statement. There was 1 who was recently on sick leave and now awaiting orders to go to sea, and there were 8 at sea, and that leaves 15 on land. Is it necessary to maintain so few of the chaplains at sea and such a large percentage at shore stations?

Secretary DANIELS. I think at the training stations, where we have from 800 to 1,000 young men, it is very important to have chaplains. I think more of them ought to be at sea. I think that is certainly so.

The CHAIRMAN. The question that occurred to me in connection with the distribution of the chaplains was this: Take a city like Washington or other cities. There you have every church denomination represented, and those men would be able to receive their spiritual instruction in the church of their particular denomination in the city where they happened to be, and the chaplains could go to the ships at sea, where there is no opportunity for the men to receive this encouragement and training.

Secretary DANIELS. Mr. Chairman, I think that is true. I have made no change in the former policy in regard to chaplains, because I have not been in office very long, and because I was hoping to get legislation that would give us more chaplains and welfare secretaries, and then we would have a scheme and a plan that would obviate the necessity for having so many on shore.

The CHAIRMAN. When I used the name of the city of Washington I simply used it as an illustration; I did not mean to use it as distinguishing Washington from any other city.

Secretary DANIELS. You mean the same thing might be true at Norfolk or any other city where these men are.

The CHAIRMAN. Yes; in Norfolk or in any other city. In other words, if chaplains could be used to better advantage aboard ships at sea or on shore, which would serve the better purpose for the purposes of the Navy?

Secretary DANIELS. I think that is very true, and in any distribution policy that would be my idea. I have not changed any of the former designations or plan, and I had hoped if we could get this new policy started we could map out a plan that would be an improvement.

Mr. WITHERSPOON. Mr. Secretary, I have been requested to call your attention to this matter. I understand that it has been the custom for a long time in the Marine Corps to lower and raise the flag every morning and evening. I have seen the custom carried out myself, and it seems to me to be a beautiful custom, and I think it is a very beneficial custom. I understand that an order has been made by which that custom shall be done away with, and, where they are located near navy yards, that it shall be only observed in the navy yards, and that these marines are frequently so far away from the navy yard that they do not participate in the custom.

Secretary DANIELS. If that is so, I do not recall it.

Mr. WITHERSPOON. I have been requested to call your attention to it and ask you to look into it. I think it is very unfortunate if that has been done, because I think such a custom inspires patriotism. It made me a better patriot, even during just one week when I stayed in a marine camp, to see the men, wherever they happened to be walking or whatever they happened to be doing, whenever that flag began to be lowered or to be raised, always stop.

The marine barracks, Mare Island, was formerly considered close enough to the main buildings to come under the Navy regulation providing that the national ensign should be displayed at only one place in a naval reservation. On February 4, 1914, the department decided that the barracks were too far removed to come under the above provision, and the following letter was written to the commandant, Mare Island:

FEBRUARY 4, 1914.

To: Commandant, Navy Yard, Mare Island, Cal.

Subject: Display of national ensign.

References:

- (a) Letter of commanding officer, marine barracks, Mare Island, September 8, 1911.
- (b) Letter of commanding officer, marine barracks, June 2, 1913.
- (c) Department's second indorsement of June 17, 1913, on reference (b).

1. In view of recent information on the effect of Art. R 1238 (3) in the case of the marine barracks at the navy yard, Mare Island, the department has decided to reverse its decision stated in reference (c).

2. You will therefore consider the marine barracks at the navy yard, Mare Island, as coming under the provisions of the last sentence of Art. R 1238 (3) and direct that the national ensign be displayed over that post.

JOSEPHUS DANIELS.

Secretary DANIELS. I think you are quite right, Judge. That may have been done in some place where they are very near together. I agree with you in regard to your sentiment about it.

Mr. WITHERSPOON. Mr. Secretary, you stated that you think we need more battleships. What is your idea about how many battleships could be used in a battle, if we had one?

Secretary DANIELS. Of course it would depend upon whom we were fighting.

Mr. WITHERSPOON. You think it would depend on that?

Secretary DANIELS. A good deal.

Mr. WITHERSPOON. You have been out on the battleships when they were having target practice, have you not?

Secretary DANIELS. I have.

Mr. WITHERSPOON. How many did they have in the firing line?

Secretary DANIELS. How many ships?

Mr. WITHERSPOON. Yes.

Secretary DANIELS. I have been on a ship when it was firing.

Mr. WITHERSPOON. You do not understand my question. How many ships did they have in the firing line? How many battleships?

Secretary DANIELS. I do not recall.

Mr. WITHERSPOON. How many did they actually carry out? Was it 16?

Secretary DANIELS. I did not count them.

Mr. WITHERSPOON. I spent four days on them, and that is the number they had; and I saw they did not have half the ships we had, and I inquired of the admirals why that was, and it was explained to me that the target practice is conducted on the very same identical principle, and the ships handled in as nearly as possible the same way, as they would be handled in actual battle, and that 16 battleships, which was the number we carried out for the maneuvers—that number was the highest possible number you could use in a battle.

Well, getting that idea out there, and seeing them do it that way, I have inquired of a number of naval officers how many ships you could use in a battle, and some of them say they think a dozen, and some say 10, and one of them told me that the French authorities hold that 8 was the highest number you could use to advantage in a battle.

Is it your idea that if we had a battle with Germany or England that we would carry out to the battle the whole number—all of our 39 battleships?

Secretary DANIELS. I have no idea that we would assemble them all at one place.

Mr. WITHERSPOON. I am talking about one battle; if we knew the enemy's ships were coming?

Secretary DANIELS. Capt. Winterhalter, one of the experts of the Navy, who is here with me, and who knows more than I do about that matter, says we would take all we had.

Mr. WITHERSPOON. You would not agree with the naval officers, to whom I have referred, who say you could not use that many?

Secretary DANIELS. No; I would not.

Mr. WITHERSPOON. Well, if we had to carry them all out, the entire 39, it would make a line about $9\frac{1}{2}$ miles long.

Secretary DANIELS. You would not put them that way; you would have them in two or three lines.

Mr. WITHERSPOON. Two or three lines?

Secretary DANIELS. You would have the first line and the second line and the third line.

The CHAIRMAN. You would not have them all in one place, would you?

Mr. WITHERSPOON. I just wanted to get your idea, if your idea is based on the facts; if we had a naval engagement, your idea is that we would use the whole 39 battleships in one battle?

Secretary DANIELS. If we needed that many.

Mr. WITHERSPOON. I suppose we would carry just as many as we could use, but what I wanted to get at was whether we could use that many?

Secretary DANIELS. Yes; if we were fighting a country which had 50 battleships and if they had 50 there, we would like to have at least as many.

Mr. WITHERSPOON. And use them all in the same battle; that is your idea?

Secretary DANIELS. That is my idea.

Mr. WITHERSPOON. That is quite different from my information from the naval officers; the information which I got from the naval officers must be a mistake. We have taken 24 years to build 35 battleships. That is an average of one battleship and a third a year for the last 24 years. Do you think we ought to increase more rapidly in the future than we have in the past?

Secretary DANIELS. You take the ships we built a quarter of a century ago; now they are obsolete, or nearly so.

Mr. WITHERSPOON. I want to ask you about that. That is not the question I am asking you now. Do you think we ought to increase the battleships in the future more rapidly than we have been increasing them for the past 24 years?

Secretary DANIELS. Well, I think we must increase them to keep the Navy efficient, and that means that we must have two new battleships.

Mr. WITHERSPOON. What I want to know is whether the rate of increase should be greater than it has been up to this time?

Secretary DANIELS. I would like for a situation to exist where we would not have to increase, but I believe at this time, if we keep our Navy in good condition, we are obliged to have at least two new battleships.

Mr. WITHERSPOON. What do you think of our Navy now; is it a great, powerful navy?

Secretary DANIELS. I would not say. Everything in the world is comparative. We have a powerful Navy.

Mr. WITHERSPOON. Just before Mr. Taft went out of office, he made a speech in New York, when he had the Navy in his presence where he could see it, and he said it was magnificent. How do you regard the Navy?

Secretary DANIELS. The ships we have are magnificent, and the Navy is magnificent.

Mr. WITHERSPOON. Yes.

Secretary DANIELS. But one second, Judge. In the great naval review which Mr. Taft witnessed in New York, he had all the ships of the Navy, those that were obsolete, and those that were in fighting trim, and there were a good many ships there he would never have sent out in a battle.

Mr. WITHERSPOON. He did not have the Pacific Fleet and the Asiatic Fleet; he just had the Atlantic Fleet?

Secretary DANIELS. He had all those which were in reserve and the gunboats on the Atlantic, as well as the best ships.

Mr. WITHERSPOON. You agree with him, it was a magnificent fleet he had before him?

Secretary DANIELS. It was a magnificent sight, but comparatively I would not call it a fleet that was the equal of the fleets of some other countries.

Mr. WITHERSPOON. At any rate, Mr. Secretary, after you have 39 battleships you have a great deal more than you had when you started!

Secretary DANIELS. Of course you had.

Mr. WITHERSPOON. After you have gotten that many, then do you think you ought to increase the number more rapidly than you did at the time when you did not have any at all?

Secretary DANIELS. You have to go forward. Every time you build a new battleship you must take out an old one. According to my program, we are making very conservative progress, because we have now three or four battleships in commission which are, in a sense, out of date, and which we really ought to have out of commission.

Mr. WITHERSPOON. This is a different question. I want to know, after you have 39 battleships, ought you to have them increased more rapidly than you did when you were just beginning?

Secretary DANIELS. If all the big navies of the world are increasing, we must—

Mr. WITHERSPOON (interposing). We must increase more rapidly after we have 39 than we did during the years when we had very few; is that your idea?

Secretary DANIELS. If the great nations of the world are doing so, we must move forward.

Mr. WITHERSPOON. You put it on the ground solely of what the other nations are going to do!

Secretary DANIELS. Not solely, but we can not live unto ourselves.

Mr. WITHERSPOON. If the other nations are not doing it, would you be in favor of increasing the Navy more rapidly after you have a great one than when you were just building it?

Secretary DANIELS. I am in favor of securing an international agreement, so that it would not be so necessary.

Mr. WITHERSPOON. I was not asking you about that. On the principle that we must increase our Navy more rapidly the greater it grows, if we build two battleships a year during your administration, it will add 8 great dreadnoughts to the 39 we already have. Will you then, after that, say that we should increase it more rapidly during the next three or four years than we had up to that time?

Secretary DANIELS. No; I should not.

Mr. WITHERSPOON. Is that not because the Navy would then be so great; is that not the reason you would not increase it more rapidly?

Secretary DANIELS. Judge, I do not know that I could say what ought to be done four years or three years hence. I am looking at the matter as it is to-day, and the proposition is to-day "What shall I do?" We have ships that are old. Shall we go forward with the Navy and keep it effective, or shall we go backward?

Mr. WITHERSPOON. Do the ships go backward when you do not build others? If you had others, does that keep the ships you have from going backward?

Secretary DANIELS. Ships go backward anyhow. Unless you renew them with modern ships, you will have a less effective Navy.

Mr. WITHERSPOON. Now, Mr. Secretary, during the last 24 years we have spent \$222,000,000 on our battleships. That is at the rate of between eight and nine million dollars a year. How much is the Pennsylvania and No. 39 going to cost us?

Secretary DANIELS. About \$15,000,000 each.

Mr. WITHERSPOON. About \$15,000,000 each. That would be \$30,000,000 a year according to your program. In view of the fact that we have spent from \$8,000,000 to \$9,000,000 a year for the last 24 years, would you call it a moderate increase now to begin spending \$30,000,000 a year?

Secretary DANIELS. You are not now beginning. You have been building at the rate of one or two a year for the last few years. There is a long stretch between 25 years ago and now. I would say we should build whatever was necessary to keep our Navy efficient.

Mr. WITHERSPOON. I did not speak of the time way back yonder, 24 years ago, but I say the average for the last 24 years has been between eight and nine million dollars a year spent on battleships. Do you think it is moderate or reasonable that we should at this time, with a powerful Navy, that we should begin to spend nearly four times that much a year?

Secretary DANIELS. The battleships then cost three or four or five million dollars.

Mr. WITHERSPOON. What is that?

Secretary DANIELS. A battleship 25 years ago cost—the highest cost was about \$5,000,000.

Mr. WITHERSPOON. Yes.

Secretary DANIELS. A battleship costs now \$15,000,000. You have to consider the cost of a ship. Battleships are like everything else. Congress 25 years ago appropriated a very small amount of money for the maintenance of the Government compared to the amount which is appropriated at this time. The cost of everything has increased. You can not compare what you spent 25 years ago with what you spend now in any department of the Government.

Mr. WITHERSPOON. Twenty-four years ago we built our battleships at a cost in the neighborhood of \$5,000,000 a year and each one of them had four 12-inch guns on it, and all the naval officers say now that we gauge the strength of the fleet by the big guns, and they do not count the strength of the small ones. I think that is partly on account of the armor plate we have now. Each one of those ships had four large guns on it.

No. 39 and the *Pennsylvania* have twelve 14-inch guns on them, three times as many big guns, and Admiral Twining says that 14-inch guns have a destructive power 50 per cent greater than the 12-inch guns and shoot with 30 per cent more accuracy. That being true, a modern dreadnought, for which we pay \$15,000,000, would be equal to three or four of those old ships in efficiency.

Secretary DANIELS. You must remember we are not building now to fight battleships which were in existence then. We are building battleships to fight battleships of other countries that have modern ships.

Mr. WITHERSPOON. I understand. I am talking about your idea of the keeping of our Navy up to its present efficiency. When we build one dreadnought now that is equal to three or four of the battleships we used to build, is it not?

Secretary DANIELS. Yes; in effectiveness.

Mr. WITHERSPOON. And it is not only in effectiveness, but in the amount of money that we spend.

Secretary DANIELS. Three times as much.

Mr. WITHERSPOON. Now, if we are just to replace those old battleships, then two battleships a year, costing \$15,000,000 apiece and being equal to three of the old ones in efficiency, would take the place of six of those every year, would they not?

Secretary DANIELS. I think this: The whole purpose of the Navy is to be ready for an emergency with a possible enemy. Any theory we have which does not take into account what other countries are doing is not correct and we are obliged to think of what other nations are building and build to meet them.

Mr. WITHERSPOON. You think, then, on account of our relations to other countries we ought to spend four times as much money for battleships now and add four times as much efficiency to the fleet now as we did when we did not have any at all?

Secretary DANIELS. I think if we did not build our battleships and go forward along the lines of what is the possible need our whole naval policy would be wrong.

Mr. WITHERSPOON. Taking those other countries—take Japan for instance. Do you know how many battleships Japan has? On page 835 of the Year Book it says Japan has 19 battleships; that is, built and building.

Secretary DANIELS. Of course, I do not know how many they are building.

Mr. WITHERSPOON. That is what the Navy Year Book says.

Secretary DANIELS. The Naval Intelligence Book shows there are 19 built and building.

Mr. WITHERSPOON. Yes; and we have 39—over twice as many as Japan has. You would not consider that, so far as our relations to Japan are concerned, it is necessary to build any more battleships?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. How many times greater ought our Navy to be than Japan's navy?

Secretary DANIELS. If you had any difficulty you would have many of your battleships on the Atlantic and they would be a long way from Japan. If you had to fight in the Philippines or Hawaii you would have a long way to go. You would want a battleship fleet that would be certain to win, and I do not know how many—absolutely how many—battleships Japan is building. Japan is buying battleships. Japan never lets you know what she is doing. These figures are as nearly correct as we can get them. Japan never orders battleships as we do.

Mr. WITHERSPOON. I understand very well that we do not know what they are doing, and we can not reason about it at all, but we are bound to go on the best information we have.

Secretary DANIELS. That is the best we have.

Mr. WITHERSPOON. Then we have more than twice as many as Japan. Do you think, so far as Japan is concerned, that we need any more?

Secretary DANIELS. We have in these ships—we have a number of old ships and old guns. We ought to have the very best there is.

Mr. WITHERSPOON. We will go into that matter later, but we are just now on the other matter. Assuming that our own was as good as theirs, and I will show you that it is much better than theirs or any other nation's; the biggest, the strongest, the most powerful battleships are in the American Navy. But that is not the question

just now. When we have already more than twice as many ships as Japan, do you think, so far as Japan is concerned, that we need any more in numbers?

Secretary DANIELS. I would not want to say in relation to any one country.

Mr. WITHERSPOON. The question I am pressing on you is in regard to Japan. Do you think we need any more? As far as Japan is concerned, we could send half of our battleships there and keep them in Manila. Would that not be sufficient to protect us from Japan?

Secretary DANIELS. It might or it might not. It would depend on where you had to go to fight.

Mr. WITHERSPOON. That is a supposition that I will not make, because I never want to see our battleships go to any foreign country to fight them: I am for defense, not conquest.

Secretary DANIELS. I hope we will never live to do that. When you are in war you have got to do what war calls for.

Mr. WITHERSPOON. We are talking about the necessity, and our necessity in the East is to protect the Philippine Islands, is it not?

Secretary DANIELS. I do not think that is the only thing. I think our necessity in war is to be prepared for the emergency that may come. You would not want to send every ship out to the Philippines. You would want to keep some over here.

Mr. WITHERSPOON. Mr. Secretary, in the last 13 years, beginning with the year 1900, we have spent on our Navy, in all, \$1,504,207,946, and Japan has spent \$391,624,299. In other words, we have spent more than a billion dollars more than Japan in the last 13 years. If that has not given us a Navy sufficient to protect us against Japan, do you think we ought to spend \$30,000,000 a year more?

Secretary DANIELS. We must have enough strength not only to win in war, but to deter an enemy from going to war with us. If we had half as many more ships as Japan, and they thought they could gain by declaring war, it would be a much more expensive business than if we had built twice as many ships and thereby prevented war.

Mr. WITHERSPOON. In view of the fact that Japan has never spent more than \$50,000,000 a year, do you think we ought to spend \$147,000,000?

Secretary DANIELS. I think we ought to spend enough to maintain an adequate Navy.

Mr. WILLIAMS. May I ask a question for information? What is the relative amount we have spent on battleships? You speak of the relative amounts which have been spent on the total of the Naval Establishment. What is the relative amount spent on battleships in the past 12 or 13 years?

The CHAIRMAN. And what is the purchasing power of money there and here?

Mr. WITHERSPOON. I insist; I want to examine the Secretary. I do not care for these interruptions. If everybody is going to join in, I will just drop out. I do not know whether this gives that data, answering your question, Mr. Williams. I have not those figures of Japan, but we have spent in the last 10 years \$222,000,000,000 on our battleships alone, and Japan has only spent \$391,000,000 in the last 13 years on everything, the maintenance of the whole navy and every-

thing in connection with it. The amount that Japan has spent on battleships is not given as compared with what we have spent.

Now, Mr. Secretary, you stated in the course of your remarks that the United States occupies the third place as a naval power, and that England and Germany were both ahead of us, and I want to ask you some questions about that and see if you have considered all the facts that I think enter into the correct solution of that.

Secretary DANIELS. In stating that, it probably might be well for me to state that according to my information from the Office of Naval Intelligence, Great Britain's total tonnage is 211,611,291 tons.

Mr. WITHERSPOON. Yes; I understand, Mr. Secretary, what that board says. That is not what I want to ask you about. I want to ask you about some facts that I think are material to the solution of the question. If you will turn to the Navy Year Book on pages 832 and 833, you will find there a comparison of our Navy and the German Navy. The German Navy is stated on page 832, and ours is stated on page 833, and I notice in the totals, we have the number of battleships, and we have the tonnage of the battleships, the names of the battleships, the number of the guns and the size of the guns, and the speed of the battleships in both navies, and I want to see about that comparison. You will notice at the bottom that it is stated the Germans have a grand total of 39 battleships. Do you find that?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And you will notice on the other side we are given a grand total of 36 battleships. Do you notice that?

Secretary DANIELS. I see that.

Mr. WITHERSPOON. In other words according to this statement, Germany has three more battleships than we have. Do you think that, so far as the numbers are concerned, that the relative power of two fleets would be determined by a difference of three battleships?

Secretary DANIELS. It might. It would depend—

Mr. WITHERSPOON. Now, in order to give Germany three more battleships than we have, you will notice that in the list of our battleships the *Oregon*, the *Massachusetts*, and the *Indiana* are left out altogether.

Secretary DANIELS. I hope the *Oregon* is, because it could not fight, and the *Massachusetts* is too old.

Mr. WITHERSPOON. There is the *Indiana*.

Secretary DANIELS. They were built at the same date.

Mr. WITHERSPOON. I am just asking you the question. You notice they are left out; they are not in the list?

Secretary DANIELS. Oh, yes; you would not call them available fighting ships now.

Mr. WITHERSPOON. We will see about that directly. I am only getting at the numbers now. They are left out, and that is the way Germany gets three more than we have. If they were in there we would have the same number?

Secretary DANIELS. Certainly, on paper.

Mr. WITHERSPOON. Yes. Let us see about their having been left out. Those three ships were each supplied with four 13-inch guns. Do you recall that?

Secretary DANIELS. No; I did not recall that.

Mr. WITHERSPOON. That is a fact; I can show you that from the list and description of the battleships in another table.

Secretary DANIELS. That is a fact?

Mr. WITHERSPOON. Yes; that each one of them was supplied with four 13-inch guns, and that is what made them battleships. You understand that a battleship is one of these ships that have these big guns—12, 13, 14, and 15 inch guns?

Secretary DANIELS. Equipped to fight.

Mr. WITHERSPOON. When the battleship question was first started that was the distinction between battleships and other kinds of warships that had been built up to that time, putting these big guns on them; that was the reason they called them battleships. Now, Mr. Secretary, I will ask you—

Secretary DANIELS (interposing). Those guns are out of date now.

Mr. WITHERSPOON. We will see about that directly. Now, Mr. Secretary, look at the first 10 ships in the list of the German ships there. You will find that the first six of them have a tonnage of between 10,000 and 11,000 tons, do they not?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And the *Oregon*, the *Massachusetts*, and the *Indiana*, that we do not count, have a tonnage of between ten and eleven thousand, just the same as the first 10 German ships. So far as the tonnage is concerned, you would not say that we ought to omit to count those three battleships of ours and count those 10 ships of the German Navy, would you?

Secretary DANIELS. The only way I can count them, Judge, is from what the men who give their lives to the study of those questions, those men who are experts, advise.

Mr. WITHERSPOON. I am asking you about the tonnage. If ours have practically the same tonnage, you would not see any reason in that why you should count 10 of theirs and leave out ours?

Secretary DANIELS. If they are the same sort of ships, I do not see why we should.

Mr. WITHERSPOON. I am getting at one fact at a time. I am calling your attention to the fact of tonnage, and the size of the ships, that they are about the same size, each between ten and eleven thousand tons. You do not see any difference in the tonnage which would justify you in comparing them, to leave those three ships out and count the German ships?

Secretary DANIELS. I know that you are getting at only one thing at a time. The real thing is not as to the tonnage alone, but the date the ship was built must be considered, and the guns and armor, and whether it is a fighting force to-day.

Mr. WITHERSPOON. I want to get your judgment on the facts. So far as the tonnage is concerned, you do not see any reason why you should omit those three ships of ours and count the German ships of the same tonnage, do you?

Secretary DANIELS. If our ships are not good fighting ships, we have no right to put them in.

Mr. WITHERSPOON. If the tonnage is put down here as an element of the comparison, when they are the same in that respect, there can not be any reason in that why you should count theirs and not count ours?

Secretary DANIELS. If you had nothing else to consider.

Mr. WITHERSPOON. Now, let us look at the guns. The first 10 ships there in the list of the German navy are supplied with guns that have

a caliber of 9.4 inches, while the three ships of ours that we do not count have a caliber of 13 inches. In caliber, the guns on the *Oregon*, *Massachusetts*, and *Indiana* exceeded that of the guns on the 10 German ships 3.6 inches. You do not see anything in the size of the guns that would justify you in counting their 10 ships and leaving our three out, do you?

Secretary DANIELS. When were their ships completed?

Mr. WITHERSPOON. About the same time ours were.

Secretary DANIELS. When was the *Oregon* completed?

Mr. WITHERSPOON. In 1895 or 1896; we had one of those completed in 1895 and, I think, the other two in 1896.

Secretary DANIELS. These were completed in 1898.

Mr. WITHERSPOON. They were just following our example. We built them first.

Secretary DANIELS. We have improved on everything we built afterwards. Perhaps they improved on those afterwards.

Mr. WITHERSPOON. Those ships were built just about the same time as ours were.

I call your attention to this—this is the British Navy Yearbook, and I find a very learned comparison by some high authority of all the fleets in the world in that book. I want to call your attention to this statement with reference to these very ships we are talking about. This is the British Yearbook. It says: "Turn to the later ships in reserve; the Majestics, with their 12-inch guns, are more powerful than the Wettin and the Kaiser classes, with their main armament of 9.4-inch guns."

In other words, this authority says that their old ships, supplied with 12-inch guns, were much more powerful than the old German ships that had only 9.4-inch guns.

You notice in the German list the first five are the Kaisers. That is what he says here, the Kaisers.

Then in 1902 the Wettin. There are 10 ships there, the first 5 having a tonnage of between 10,000 and 11,000 tons, and the next 5 between 11,000 and 12,000 tons, and they are all supplied with those smaller guns, 9.4 inches.

If you will turn back to page 830, where the English ships are given, you will find the ships that this same authority refers to, the Majestics. That is the first?

Secretary DANIELS. Yes; but the same British Yearbook you quote states as follows: "The British and German navies (more especially the latter) have both improved their position relatively to other navies during the past year."

Mr. WITHERSPOON. And that had a tonnage of 14,000 tons, and those ships were supplied with 12-inch guns. This authority, comparing the English ships with 12-inch guns with the German ships with the 9.4-inch guns, says that the English ships are much more powerful, because they are supplied with 12-inch guns, more powerful than the German ships with 9.4-inch guns. If the old English ships were more powerful than they are, then would it not follow that the *Oregon* and *Massachusetts* and the *Indiana*, with 13-inch guns, are more powerful than these 10 German ships? Would you not say that?

Secretary DANIELS. I would say it is. I understand that England is selling some of those ships. The only thing I can do—I am

not an expert; I do not claim to be able to give you expert testimony—all I can do is this: We have able naval officers and able naval men in the Intelligence Office, and I am bound to learn as much as I can from their expert testimony. I can not go in the ships. As Emerson said, "I must be brave enough to be ignorant of many things."

I do not understand the minutiae with the knowledge of an expert in battleships, and whether this one would be as effective as another. In all those matters I am guided by expert testimony, and in taking that testimony I believe that these ships you speak of—like our own *Oregon*, if they are like the *Oregon*—have not been rebuilt; some of those ships have been rebuilt. The expert testimony, given by men who are experts in these matters concerning ships, is that those ships are out of date. They would not send our sailors in them to fight.

Mr. WITHERSPOON. I understand that, Mr. Secretary, but if the *Oregon* and *Massachusetts* and *Indiana* have the same tonnage and are supplied with 13-inch guns, and you compare the German Navy with ours, ought you to count their ships inferior to ours and leave those out?

Secretary DANIELS. That may be, if we were going into the matter of comparison by size entirely. All I can do is to say that those ships are antiquated. We have eliminated three of ours, and they are not the sort of ships that we would dare send out with men to fight in.

Mr. WITHERSPOON. That is not what I am asking you. You admit that, in your judgment, the German Navy was superior to ours, and I want to see if you have considered the facts on which that judgment must rest if it is correct. Here is one of the facts: In making that comparison, in order to give the German Navy three more battleships than we have, you have got to count in 10 German ships whose guns are 3.6 inches less in caliber and of the same tonnage as those of ours; that you admit. Do you think that is a fair comparison?

Secretary DANIELS. In our Navy we omit all ships 20 years old, and it is so stated in the table before you.

Mr. WITHERSPOON. We have not a single battleship in the Navy 20 years old.

Secretary DANIELS. We omit those—

Mr. WITHERSPOON. We never had any. Our first ship, Mr. Secretary, our first three battleships were authorized in June, 1890, and the first one of them was completed in 1895, and it has not been 20 years since 1895.

Secretary DANIELS. And yet we have made great progress in 10 or 15 years.

Mr. WITHERSPOON. Your statement that they are 20 years old I beg to differ with.

The CHAIRMAN. May I suggest at that point that the question of estimating the age of a battleship is, in naval architecture, from the laying of the keel, and not from the completion of the ship.

Mr. WITHERSPOON. That does not enter into this matter.

Now, Mr. Secretary, if, in order to give the German Navy three more battleships than we have, you have got to count in 10 German battleships with a tonnage no greater than ours and supplied with guns 3.6 inches less in caliber than ours, then what I want to know is

if, in giving your judgment that their navy is superior to ours, you considered that fact?

Secretary DANIELS. I accepted the totals given by the best experts in America in naval construction and naval affairs.

Mr. WITHERSPOON. Then, in giving your opinion, you did not base it on a consideration of the facts, but on what they told you?

Secretary DANIELS. I accepted the view of the best experts in America.

Mr. WITHERSPOON. So much for the number of the ships. If it is right to exclude the *Oregon*, the *Massachusetts* and the *Indiana*, and if the first 10 ships in the German Navy should also be excluded because they are as old and because they have less powerful guns, then we would have considerable—we would have several battleships more than they!

Secretary DANIELS. Seven more, I believe, are the figures.

Mr. WITHERSPOON. Then, so far as the comparison of the two navies is concerned, as it is governed by the number of battleships, ours would be superior?

Secretary DANIELS. If you cut off 10 of theirs, of course.

Mr. WITHERSPOON. And three of ours.

Secretary DANIELS. That is a matter of figures; that would be in numbers only.

Mr. WITHERSPOON. That is what I was asking about. I will ask you to look at those tables again and tell me if they do not show that, so far as the predreadnaught type is concerned, that the tonnage of ours is much greater than that of the Germans, beginning with the first one. The first there is less than 11,000, is it not, and ours is greater than 11,000?

Secretary DANIELS. The figures are here.

Mr. WITHERSPOON. The figures show that ours—the first five are greater in tonnage than theirs by about a thousand tons?

Secretary DANIELS. They are the figures; yes.

Mr. WITHERSPOON. Now, you take the second group there. Theirs is 11,604 tons and ours is 12,500 tons; ours is greater, is it not?

Secretary DANIELS. Of course they are; you can look at the figures and see about that. I do not want you to take all these figures and put me in the position of saying that they are greater than ours or ours are greater than theirs. In this matter of whether the German Navy is stronger than ours in numbers of guns, I am taking the statements of the Naval Intelligence Office.

Mr. WITHERSPOON. But, Mr. Secretary, I have the right as a member of the Naval Affairs Committee to ask your opinion, which is going to have great weight in Congress, and I think I have a right to get the facts and invoke your judgment on those facts.

Secretary DANIELS. Yes; but you are asking me for facts of which I have no knowledge, except from expert testimony.

Mr. WITHERSPOON. This book was gotten up by experts?

Secretary DANIELS. I do not doubt these facts, but you are asking me for facts which I say in my own knowledge I do not know anything about.

Mr. WITHERSPOON. Comparing the battleships of Germany from 1904 down to 1908, which ended her battleship program, they are of 12,991 in tonnage, are they not, according to those figures?

Secretary DANIELS. According to those figures.

Mr. WITHERSPOON. Now, taking the same thing in 1902, ours are 14,948 down to 1906, and from there on it is 16,000; is that not so? It shows that the tonnage of our predreadnaught battleship fleet is much larger than that of the German?

Secretary DANIELS. There are the figures for the older ships, and during the years that only these ships were in existence our Navy was superior to Germany's.

Mr. WITHERSPOON. Let us look at the guns. The first 10 ships of the German Navy there are supplied with four 9-inch guns, and all the balance of the predreadnaught battleships are supplied with 11-inch guns; is that not what it shows?

Secretary DANIELS. You have stated the figures as they are in that book.

Mr. WITHERSPOON. Look at the American Navy and state if it is not a fact that all of ours are supplied with 12 and 13 inch guns.

Secretary DANIELS. That is right.

Mr. WITHERSPOON. Then, in tonnage and in the power of the guns, too, our fleet appears to be much greater than that of the Germans, does it not?

Secretary DANIELS. In size, but not in power, and only for predreadnaught ships.

Mr. WITHERSPOON. The power depends, I suppose, on other things. Now, coming to the dreadnaught type there.

Secretary DANIELS. We find there is no 13—

Mr. WITHERSPOON. Mr. Secretary, is it not a fact that in the German 13s you find four of them supplied with 11-inch guns?

Secretary DANIELS. Yes; that is what the figures show.

Mr. WITHERSPOON. And all of ours are supplied with 12 and 14 inch guns, are they not? Now, I asked some of the naval experts who have been before us, some of the admirals, what a dreadnaught was and they told me that a dreadnaught was a battleship whose main battery consisted of large guns, 12, 13, 14, and 15 inch guns. And here, in order to give Germany more dreadnaughts than we have, there are included four battleships with only 11-inch guns; is that not so?

Secretary DANIELS. That is what it shows here.

Mr. WITHERSPOON. If you are to take off those four German—

Secretary DANIELS (interposing). Would have nine, and we would have seven.

Mr. WITHERSPOON. Let us see about those seven. You understand the difference between a dreadnaught and an ordinary battleship, that in a dreadnaught the battery consists solely of big guns, do you not?

Secretary DANIELS. That is, large guns?

Mr. WITHERSPOON. Large guns.

Secretary DANIELS. Yes; they have big guns.

Mr. WITHERSPOON. Look at the *Michigan* and *South Carolina*, the two battleships put down there in the total of our dreadnaught battleships; do you see them?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. They are 16,000 tons, and their main battery is composed of eight 12-inch guns.

Secretary DANIELS. Yes.

Mr. WITHERSPOON. They have no small guns in their main battery like those ships just above have, have they?

Secretary DANIELS. No; they have not.

Mr. WITHERSPOON. Are not those two ships of the predreadnaught type?

Secretary DANIELS. I am informed that these ships are not dreadnaughts.

Mr. WITHERSPOON. If that is the direction, and it is borne out by all the Navy books, that wherever the main battery consists of big guns they are put down in the dreadnaught type, except where you come to compare the American Navy with foreign navies, and then, in order to make ours look just as little as possible, you take two off the dreadnaughts and put them in the other class.

Secretary DANIELS. Of course, in making these comparisons, you have got to consider many things. You take Germany. You could ask questions—take the battle cruisers and see how big they are. They should be in the dreadnaught class.

Mr. WITHERSPOON. If we were to treat the two ships, the *Michigan* and the *South Carolina*, like all the other ships in this comparison are treated, where the main battery consists of 12-inch guns, and larger ones, treat them in the same way, we would have nine dreadnaughts, the same as Germany.

Secretary DANIELS. If you would call them dreadnaughts, of course; but the experts do not call them dreadnaughts. My opinion about what a dreadnaught is, as, for instance, the relative difference between the *South Carolina*, for instance, and the *Wyoming*—I do not think that is worth very much.

In these matters I, being a civilian and not an expert, and having very little experience as yet, accept the judgment of the best experts in the Navy, and I do not pretend to know the distinction in all its parts between, for instance, the *South Carolina* and the *Texas*. I am giving you the opinion in this matter of the best experts in the Navy.

Mr. WITHERSPOON. Now, Mr. Secretary, we publish these annual yearbooks, do we not?

Secretary DANIELS. You do.

Mr. WITHERSPOON. And a copy of that book is sent to each member of this committee, and I suppose they send it to me in order that I may get information and learn about the Navy. If they do not send it for that purpose I do not know why they send it.

Secretary DANIELS. And the men who make it up give it to you on the basis of the best expert information in the Navy.

Mr. WITHERSPOON. That is what I am getting at. The Navy Yearbook, which was published a year ago, in 1912, puts these two ships, the *Michigan* and the *South Carolina*, puts them down as dreadnaughts.

Secretary DANIELS. I did not know that.

Mr. WITHERSPOON. I think they have degenerated from the dreadnaught to the common battleship type within a year. Why was that?

Secretary DANIELS. I did not know that.

Mr. WITHERSPOON. That is true; I know what I am talking about.

Secretary DANIELS. If you want an opinion about it, I will consult with the experts in the Navy Department and give it to you.

Mr. WITHERSPOON. I want your opinion.

Secretary DANIELS. I say, Judge, I do not qualify as an expert. When you ask me to qualify as an expert on guns and all these differentiations between a ship of so many tons, and another ship of so many tons, I say to you, frankly, I do not know.

Mr. WITHERSPOON. You have just said that according to this Navy Yearbook Germany has nine dreadnaughts and we have seven.

Secretary DANIELS. According to this.

Mr. WITHERSPOON. And that is accomplished by taking two battleships that have always been put down in the Navy Yearbooks as dreadnaughts up to this year and putting them in the other class; that is the way it is accomplished?

Secretary DANIELS. I did not know it had been changed.

Mr. WITHERSPOON. It has been changed that way. Now, I want to ask you—

Secretary DANIELS (interposing). As I say about these figures, the gentlemen who compiled them got them from what they thought were the best sources. I depend upon this statement of the Office of Naval Intelligencer of the Navy Department, and their information is obtained by attachés all over the world. And I expect to depend upon that, and if you will take that you will find—

Mr. WITHERSPOON (interposing). I have taken that; I know what they say. I have studied that, but I think there are a great many people standing around in this country who want more battleships, and they are influenced in their comparisons for the purpose of furnishing an argument for more battleships. You see right here in this Navy Yearbook where they failed to count 3 of our battleships and count 10 German battleships that are inferior to the 3 of ours which they omitted.

They take two dreadnaughts, according to the definition we have on record, and put them into the battleship class, and I can not see any purpose in that except to depreciate our Navy in order to strengthen the argument for more battleships, and that is what I want to call to your attention.

Now, the further comparison of those dreadnaughts—before I come to that, there is one question I wanted to ask you about the number of predreadnaught battleships.

It appears from that list that Germany has 20, and that we have, according to that list, 24, and if we had counted all of ours, we would have had 27, and Germany 20 of the predreadnaught class, is not that so?

Secretary DANIELS. I have not counted them. If you have counted them, that is all right, and I will accept your figures, but I think you will find that in the last few years as many German ships have been omitted as American on account of being more than 20 years old.

Mr. WITHERSPOON. Yes; I have counted them, and if it is found that I have counted them incorrectly, you will have an opportunity to change them.

Secretary DANIELS. I have no doubt it is correct.

Mr. WITHERSPOON. Yes, sir; it is absolutely correct.

Secretary DANIELS. Germany has 20 and we have 24.

Mr. WITHERSPOON. That does not count the three battleships we have been talking about, the *Indiana*, the *Oregon*, and the *Massachusetts*.

Secretary DANIELS. If you bring them in—

Mr. WITHERSPOON (interposing). It would make 27 which we would have, or an excess of seven battleships over the Germans, counting the two dreadnaughts in as battleships. If we leave them out, we would have 25 to their 20. Now, Mr. Secretary, in regard to the dreadnaughts, I want you to look at the two lists and tell me which is the greater in tonnage, the American or the German?

Secretary DANIELS. The dreadnaughts?

Mr. WITHERSPOON. Yes.

Secretary DANIELS. You mean in the yearbook.

Mr. WITHERSPOON. Yes. I know what the other thing is; I know what they say, and I am trying to get at some facts to bring out, to show why I differ with those people who got up that statement.

Compare the dreadnaughts of Germany with ours. It is a fact that their dreadnaughts begin with 18,600 tons and ours begin with a tonnage of 20,000, is it not?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Then their biggest dreadnaught has a tonnage of 23,306 and our biggest dreadnaught has a tonnage of 27,000; is that not so?

Secretary DANIELS. That is so.

Mr. WITHERSPOON. Comparing their dreadnaughts with our dreadnaughts in point of power of the guns, is it a fact that four of their have 11-inch guns and the balance have 12-inch guns, while all of ours have 12-inch guns except one, which has 14-inch guns; does that not show that, so far as the guns are concerned as well as the tonnage, that ours is the greater?

Secretary DANIELS. The Germans think not.

Mr. WITHERSPOON. I do not care what the Germans think; I want your opinion.

Secretary DANIELS. These figures show that ours, as you say—that they have 11, and it shows—

Mr. WITHERSPOON (interposing). It shows that ours is the greater, does it not?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And ours is greater in tonnage, greater in the power of the guns, and, if we would take the *Michigan* and the *South Carolina*, which are dreadnaughts, and put them where they belong, the numbers would be the same; is that not so?

Secretary DANIELS. If you deliberately take them and put them in the dreadnaught class.

Mr. WITHERSPOON. I do deliberately do it when I see their main batteries are 12-inch guns. When I see that I put them right where all the others are, with their main batteries.

Secretary DANIELS. Of course I do not know the reasons which caused the experts to make the tables out that way. I take it they had good reasons.

Mr. WITHERSPOON. You say you take it they had good reasons. Do you think men who will put down the *Michigan* and *South Carolina* as dreadnaughts last year and put them in a different class this year would have had good reasons for it?

Secretary DANIELS. One year a 10-inch gun is thought to be the best we have; but when you have 12 and 14 inch guns there is a new classification.

Mr. WITHERSPOON. But these had the identical same guns, and the same tonnage, and were the same in every respect last year as this year.

Secretary DANIELS. I have no doubt the gentlemen who compiled the list got it from the best information they could, and I have no doubt that when they made the statement they thought it was right.

As I say, this is the statement which the Navy Department has prepared. I know as to this that they have put in a statement which they think was right.

Mr. WITHERSPOON. Mr. Secretary, that is not what I wanted to invoke your judgment about. So far as those naval officers are concerned, they sent one up here as the representative of your General Board and I put these facts to him, and I got this Naval Yearbook and asked him to compare the numbers and character of our guns and their guns, and asked him which they showed was the greater Navy, and he said if those facts as shown in the Navy Yearbook were true, it showed theirs was. That is the judgment of the representative of the General Board. Now, I want to get from you just what I got from him, and that is your judgment, based on the facts, not on some unknown facts, about which we know nothing.

You take the battleships that are building now, and let us compare them. Do you see the figures for Germany?

Secretary DANIELS. They are building six and we are building five.

Mr. WITHERSPOON. They are building one more than we are, according to that statement.

Secretary DANIELS. Yes; according to that statement.

Mr. WITHERSPOON. The tonnage of the ships they are building begins with 26,575.

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Of those we are building, the first one has a tonnage of 27,000; is that not so?

Secretary DANIELS. That is right.

Mr. WITHERSPOON. And we have three ships, then, with 27,500 tons; is that not so?

Secretary DANIELS. That is right.

Mr. WITHERSPOON. And our two largest ships have a tonnage of 31,400, and the two largest battleships that Germany is building have a tonnage of 28,000; is that right?

Secretary DANIELS. Those are the figures.

Mr. WITHERSPOON. In the tonnage of the ships we are building, theirs is 3,400 tons less than ours; is not that the way it appears?

Secretary DANIELS. I have not added the figures.

Mr. WITHERSPOON. You do not have to add them. You see the last two German ships are 28,000 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. You see that the *Pennsylvania* and No. 39—

Secretary DANIELS (interposing). Are 31,400 tons.

Mr. WITHERSPOON. Then, those figures show, do they not, that out last two ships exceed the last of the German dreadnaughts they are building by 3,400 tons; is that not so?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Let us compare them as to the guns; all of theirs, except two, have 12-inch guns; is that not so?

Secretary DANIELS. Yes; that is right. Those two have 15-inch guns.

Mr. WITHERSPOON. What size guns have ours?

Secretary DANIELS. This book says 14-inch guns.

Mr. WITHERSPOON. That makes a total of 64 14-inch guns. The Navy Yearbook has it 54, and anybody who can add can see that they have just left off 10. The total is 64.

Secretary DANIELS. That is right.

Mr. WITHERSPOON. The ships we are building have 64 14-inch guns?

Mr. BRITTEN. Fifty-four is right.

Mr. WITHERSPOON. Let us see about that. The *New York* has 10, the *Nevada* and *Oklahoma* have 10 each, that is 20, and that makes 30.

Secretary DANIELS. That is right.

Mr. WITHERSPOON. And the *Pennsylvania* and *No. 39* have 12 apiece, that is 24, and added to the 30 that makes 54, and, then, the *Texas* above there has 10, which makes 64 14-inch guns we have.

Secretary DANIELS. That is the way it foots up.

Mr. WITHERSPOON. This Navy Yearbook, if you will turn over to page 838, proposes to put down all of our 14-inch guns. It puts them down as 54 and has left off 10 of them.

Mr. BRITTEN. But in your comparison you embraced the *Texas* as against one of the German ships. Now, you are taking it out of the dreadnaught class and putting it in the class of battleships building, and trying to compare it with the six building in Germany. You are trying to count them in both places.

Mr. WITHERSPOON. That is where they ought to be, because that first list comprises the dreadnaughts that are building, and the *New York* is building just as much as the *Texas*.

Mr. BRITTEN. Then why not take it out?

Mr. WITHERSPOON. You would have to put it in the other one, and it would be as broad as it is long.

The CHAIRMAN. It is now half-past 1 o'clock, and if Judge Witherspoon does not object, I think we had better stop now for the day, and let the Secretary return to-morrow morning.

Mr. WITHERSPOON. Very well, that will be satisfactory to me.

(Thereupon, at 1.30 o'clock p. m., the committee adjourned until to-morrow, Tuesday, February 3, 1914, at 10.30 o'clock a. m.)

COMMITTEE ON NAVAL AFFAIRS,
Tuesday, February 3, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE
NAVY—Continued.

The CHAIRMAN. Gentlemen of the committee, we have with us again this morning the Secretary of the Navy. Yesterday Mr. Witherspoon was pursuing a course of questions.

Mr. WITHERSPOON. Mr. Chairman, I should like to ask the Secretary some more questions.

The CHAIRMAN. You may proceed, Mr. Witherspoon.

Mr. WITHERSPOON. Mr. Secretary, on yesterday we discussed the question of the German and American navies. It has been suggested to me that I did not make any comparison in point of speed. I want to call your attention to that this morning. I will ask you to look on page 832 of the 1913 Yearbook, at the German list of battleships, and see if you do not find the speed of all those battleships to be 18 and a fraction knots, and that 18.7 knots is the highest speed?

Secretary DANIELS. They are the figures here.

Mr. WITHERSPOON. Look at the American line of battleships.

Secretary DANIELS. You will observe that a number of them are 16 knots and a number of them are 17 knots.

Mr. WITHERSPOON. You say that "a number of them are 16 knots"; how many of them are 16 knots?

Secretary DANIELS. Two, 16.82 and 16.90 knots.

Mr. WITHERSPOON. 16.90 knots is almost 17 knots?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And 16.82 knots is not very far from 17 knots. Seven are 17 and a fraction knots.

Secretary DANIELS. Yes. You will observe that not a single one of Germany's battleships is less than 18 knots.

Mr. WITHERSPOON. I understand; you have already stated that. How many of the American battleships are 18 and a fraction knots, the same as Germany's battleships?

Secretary DANIELS. Ten.

Mr. WITHERSPOON. Ten?

Secretary DANIELS. Eighteen and a fraction knots.

Mr. WITHERSPOON. How many battleships in the American list have a speed of 19 and a fraction knots?

Secretary DANIELS. Five.

Mr. WITHERSPOON. Then we have five battleships, so far as speed is concerned, that are superior to any battleships in the German Navy, have we not?

Secretary DANIELS. We have one more knot, yes; but the speed of a fleet is the speed of the slowest ship in it.

Mr. WITHERSPOON. Now, we will take the dreadnaughts. The most of the German dreadnaughts have a speed of 20 and a fraction knots, have they not?

Secretary DANIELS. Most of them have.

Mr. WITHERSPOON. There are only three that have a speed of 21 and a fraction knots. Is not that so?

Secretary DANIELS. Already built?

Mr. WITHERSPOON. Yes; that is the list we are talking about.

Secretary DANIELS. Yes; three.

Mr. WITHERSPOON. In ours the lowest speed is 20.75 knots, is it not?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And all of our others are 21 and a fraction knots, is not that so?

Secretary DANIELS. Yes.

Mr. HENSLEY. Mr. Witherspoon, the lowest of ours, how many does that include?

Mr. WITHERSPOON. Just one. That is 20 and a fraction knots. All of the balance of ours are 21 knots. It looks like our dreadnaughts on the whole have a superior speed, does it not?

Secretary DANIELS. Yes; if you now omit the *Michigan* and *South Carolina*, which you wished to include with the dreadnaughts yesterday.

Mr. WITHERSPOON. Now, as to those that are building—all that Germany is building have a speed of 22 knots?

Secretary DANIELS. Four 22 knots and two 23 knots.

Mr. WITHERSPOON. Those we are building, two of them have 20 and a fraction knots and the other two 21 knots. They are inferior to the German ships in speed.

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Taking the speed of the battle ships and dreadnaughts built and building, you do not see very much difference between them?

Secretary DANIELS. Not very much.

Mr. WITHERSPOON. I do not.

Secretary DANIELS. Although the German ships have some more speed.

Mr. WITHERSPOON. Yes. Now, Mr. Secretary, I would like to call your attention to the comparison made here of armored cruisers. At the bottom of the page, what is the grand total of the German armored cruisers?

Secretary DANIELS. Do you mean built and building?

Mr. WITHERSPOON. Yes, sir; right at the bottom; it includes all of them.

Secretary DANIELS. Nine armored cruisers.

Mr. WITHERSPOON. No. Down at the bottom of page 832 you will see, "Grand total, 16 armored cruisers."

Secretary DANIELS. That includes the battle cruisers building.

Mr. WITHERSPOON. It includes the whole business, 16 armored cruisers?

Secretary DANIELS. Sixteen.

Mr. WITHERSPOON. Look on the American side and see if you do not see a grand total of only 11 armored cruisers?

Secretary DANIELS. Eleven; yes.

Mr. WITHERSPOON. That is what it says. Is it not a fact that they got the number of armored cruisers 11 by treating them just like the battleships, leaving out 3?

Secretary DANIELS. But they put them in here. There is nothing misleading. Evidently the *Charleston*, *Milwaukee*, and *St. Louis*, being only 9,700 tons, are not as well armored as the others and are put in a separate classification.

The CHAIRMAN. They are protected cruisers?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. I understand all that. It is a fact that they put down in this Year Book a grand total of 11 armored cruisers and they accomplish that by leaving out of the grand total 3 armored cruisers?

Secretary DANIELS. No; on the contrary—

The CHAIRMAN (interposing). They are protected cruisers and never were armored cruisers. I do not think, Mr. Witherspoon, that you have the right to say they are armored cruisers when they are not and never were armored cruisers.

Mr. WITHERSPOON. That is just your judgment, and I differ about that. The 11 is gotten at by leaving out 3 armored cruisers?

Secretary DANIELS. No; they are not armored cruisers.

Mr. WITHERSPOON. Let us see about that. I read to you a note at the bottom of page 833 which reads as follows, to wit: Right under the words "*Charleston, Milwaukee, and St. Louis*," the 3 armored cruisers not included in the grand total of 11 armored cruisers, right under that do you not find this language: "Officially the 3 ships are protected cruisers. They are actually armored cruisers and so treated by standard foreign publications. If included in above table they would give: Grand total, 14 armored cruisers, 178,395 tons." Is not that so?

Secretary DANIELS. But you will observe that there is nothing misleading about that.

Mr. WITHERSPOON. I did not say anything about misleading. I asked you, Mr. Secretary, if you do not find that note there?

Secretary DANIELS. The words you read are there.

Mr. WITHERSPOON. And they declare that those armored cruisers are omitted from the list of armored cruisers, and are so treated by foreign standard publications?

Secretary DANIELS. But before that it says, "Officially the three ships are protected cruisers."

Mr. WITHERSPOON. That is just what I am complaining about—that officially they appear one way and actually they appear another way.

Secretary DANIELS. As a matter of fact, these three ships are put down here so that everybody can see exactly what we have, and there is nothing in that to show that they are trying to take anything out.

Mr. WITHERSPOON. Let us see about that. I call your attention to the armored cruisers in the German list, first, with reference to the speed of those cruisers. You find in that list three armored cruisers, *Prinz Heinrich, Prinz Adalbert, and Friedrich Karl*, with a tonnage of between 8,000 and 9,000 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. The three American armored cruisers that are not in the grand total of 11 armored cruisers, the *Charleston, Milwaukee, and St. Louis*, have a tonnage of 9,700 tons, or about a thousand tons more than the three armored cruisers that are put down in the German list?

Secretary DANIELS. It is so stated there; yes.

Mr. WITHERSPOON. As to the guns on those three armored cruisers that I have asked you about, one of them has only two 9.4-inch guns, and the other two have 8.2-inch guns, while the three armored cruisers, the *Charleston, Milwaukee, and St. Louis*, have fourteen 6-inch guns?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. In other words, they have two more guns than the German cruisers?

Secretary DANIELS. You have added the figures up and I guess that is right.

Mr. WITHERSPOON. The first one has two 9.4-inch and ten 5.9-inch guns; that is 12. The second one has 4 and 10; that is 14.

Mr. BRITTEN. And larger guns.

Mr. WITHERSPOON. Well, that may be your judgment, Mr. Britten, of their power.

Mr. BRITTEN. The figures speak for themselves.

Mr. WITHERSPOON. You interjected a thing here, and let me answer you. We have fourteen 6-inch guns which, in my judgment, are larger than the ten 5.9-inch guns on each one of the German ships. I think 6 is bigger than 5.9 inch.

Mr. BRITTEN. And four 8.2-inch guns.

Mr. WITHERSPOON. In view of the comparison of tonnage and guns of those three armored cruisers, the German cruisers, with the three which are omitted, do you see any reason why they should not be put down there like foreign standard authorities put them down?

Secretary DANIELS. The reason is that they are not actually armored cruisers, they are protected cruisers, and there is a differentiation between them. This shows the first lot in one table, and putting the other three separately gives the public an exactly correct statement.

Mr. WITHERSPOON. You say that they are not actually armored cruisers. The statement in the note in the Year Book says, "They are actually armored cruisers"?

Secretary DANIELS. That is a question. The experts, the General Board, the experts of the Navy, say that they are protected cruisers.

Mr. WITHERSPOON. This book is prepared by the experts of the Navy?

Secretary DANIELS. Yes; it is in part.

Mr. WITHERSPOON. Which experts do you rely on? One set of experts say that they are actually armored cruisers and the others say they are not, which do you rely on?

Secretary DANIELS. Well, my understanding is that you are asking these questions to show that there is something misleading in the exclusion of inclusion of certain ships. If there was anything misleading they would not have put them here and said if you add these they make so many. There is certainly nothing to mislead anybody.

Mr. WITHERSPOON. It appears that Germany, as given by this book, has three more battleships than we have by excluding the three armored cruisers which are superior to 10 of the German ships; it also appears that in making the grand total of the big guns they have left out 10 of our 14-inch guns; it also appears that in order to make her dreadnaughts superior to ours they have taken two dreadnaughts and put them in the battleship line, and then here in the armored cruisers it appears that for some reason three of our armored cruisers that are superior to three of the German armored cruisers are not included in the grand total. Did all that happen just by accident or design?

Secretary DANIELS. I do not think that appears.

Mr. WITHERSPOON. Well, let us compare those cruisers a little further. Of the German cruisers the smallest one has a tonnage—

Secretary DANIELS (interposing). Which one?

Mr. WITHERSPOON. The armored cruisers in the German list. Three have a tonnage of over 8,000 tons, two of over 9,000 tons, one of over 10,000 tons, two of over 11,000 tons, and one of over 15,000 tons. In ours, the smallest one is over 9,000 tons, which exceeds the German smallest one by a thousand tons and all of our others have a tonnage of 13,680 and 14,500 tons, which are larger than all the German cruisers except one. Is not that so?

Secretary DANIELS. Our lowest one is 9,000 tons and the highest 14,500 tons. Their lowest is 8,700 tons and highest 15,500 tons?

Mr. WITHERSPOON. They have only one of 15,500 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. But we have four of 14,500 tons?

Secretary DANIELS. Yes; and then those of 13,000 tons.

Mr. WITHERSPOON. All of theirs are smaller than ours, except one. Is not that so?

Secretary DANIELS. In tonnage; yes.

Mr. WITHERSPOON. In point of tonnage our armored cruisers seem to be superior?

Secretary DANIELS. Yes; we have more tonnage.

Mr. WITHERSPOON. In point of guns all of the armored cruisers in the German Navy have 8.2-inch guns, except the first two ships?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. And we have four cruisers with 10-inch guns?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Larger than any on the German armored cruisers, and the balance of our guns are 8-inch, which is two-tenths of an inch less than on the German cruisers?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. So far as armament is concerned you do not see any superiority in the German armored cruisers, do you?

Secretary DANIELS. No.

Mr. WITHERSPOON. When we come to the battle cruisers, Germany has four built and they have 11-inch guns, and their speed is 28 knots?

Secretary DANIELS. We have none.

Mr. WITHERSPOON. So far as the speed of the battle cruisers is concerned, they are far superior to anything we have?

Secretary DANIELS. They have sacrificed armor and armament to speed.

Mr. WITHERSPOON. So far as the question of running away is concerned, Germany is far in the lead?

Secretary DANIELS. They have greater speed in these battle cruisers.

Mr. WITHERSPOON. Yes. You consider with that showing that Germany has a superior fleet to ours, and they could get out of the way faster?

Secretary DANIELS. I think you are bound in considering the effectiveness of a navy to consider all of its fighting units. You will observe that of these battle cruisers, which are everywhere called capital ships, Germany has four built and three building. They have a total tonnage of 172,974 tons. Now, as an offset to those we have nothing at all.

Mr. WITHERSPOON. Well, if you say that we have nothing to offset them—our 14 armored cruisers are far superior to their 9, we have five more armored cruisers than they have, if you say that our armored cruisers do not offset their battle cruisers?

Secretary DANIELS. We have not that many. You have included the protected cruisers.

Mr. WITHERSPOON. Well, you said that you relied on the experts, and I am relying on the experts that wrote this note, which says

that they are actually armored cruisers. Assuming that they are right about that, then we have five more armored cruisers than Germany has.

Secretary DANIELS. Then, you should say that Germany has three battle cruisers which have a total displacement of 84,000 tons.

Mr. WITHERSPOON. We do not disagree about that. So far as battle cruisers are concerned, if that is to determine the matter, I admit that we have an inferior navy to Germany—if that is going to determine it—but that is not what I am asking you about. Leaving that out, it is a fact that we have five more armored cruisers than Germany, and that our armored cruisers are superior to Germany's in tonnage and armament?

Secretary DANIELS. You are leaving out a very important factor.

Mr. WITHERSPOON. I understand that you think so, Mr. Secretary, considering the battle cruisers, which we do not disagree about. Just considering the armored cruisers, it is a fact that in numbers we exceed the Germans five; in tonnage we exceed them, and in armament we exceed them, and our Navy is superior to theirs, leaving out their battle cruisers. Is not that true?

Secretary DANIELS. If you only count their armored cruisers and include the *Charleston*, *Milwaukee*, and *St. Louis*, we do.

Mr. WITHERSPOON. It comes down to this point: If Germany has a superior navy to ours, it is because of her battle cruisers; and if that is so, then I ask you why you are recommending battleships instead of battle cruisers?

Secretary DANIELS. I do not think that is the fact at all. I think the fact that they have these four battle cruisers built and three building must be considered in the general effectiveness of any navy. You can not omit them.

Mr. TALBOTT. That is the most recent thing the Government there is doing?

Secretary DANIELS. Yes; and instead of building battle cruisers, we are using all of our money in the dreadnaughts, and Germany is also building not only these three battle cruisers, but two battleships. They are building in their program three of these swift battle cruisers and two dreadnaughts this year.

Mr. WITHERSPOON. In the battle cruisers they have to sacrifice the power of the guns and the protection in the armament to speed!

Secretary DANIELS. Yes.

Mr. BRITTEN. What about speed?

Mr. WITHERSPOON. Speed is a mighty important thing when you are whipped and want to get away.

Secretary DANIELS. I insist in any comparison you make that you must put into the record the fact that they have these four battle cruisers, which we have not; they are building three, which we do not ask for; and they are building two dreadnaughts of the same type that we do ask for.

Mr. WITHERSPOON. Mr. Secretary, we have compared the German and American Navies and, very briefly, the American and Japanese Navies. I will call your attention to a statement made by one of the great experts of the Navy, Admiral Vreeland, who was before the committee the other day, who told us about the relations that Governments sustain to each other, and in view of that fact stated that if we

had a war with any of the European countries none of them could afford to send as many as half of their ships over to fight us. Do you approve of that statement of your expert?

Secretary DANIELS. I do not think that any nation would send all of its ships. Admiral Vreeland knows more about that than I do.

Mr. WITHERSPOON. As he knows more about that than you do, will you take his statement as true, and assuming that in a war with England or Germany or any of those great countries they could not afford to send over half of their fleet to fight us, will you not concede that we have a Navy that is abundantly sufficient to protect us?

Secretary DANIELS. I take it that he meant that no nation in the beginning of a war would send more than half, but I take it that any nation in war will send everything they have when they are in a fight with another country in order to win a battle.

Mr. WITHERSPOON. Then you differ with this expert?

Secretary DANIELS. In that respect.

Mr. WITHERSPOON. You do not rely on the experts in all instances?

Secretary DANIELS. Not in all matters; and no doubt if you asked him the question, if when the battle became close and hot and the issue was in doubt any nation would not send everything it had to win the fight. I think he would say that they would.

Mr. WITHERSPOON. The question was, Just assuming that he was correct in his statement and they could not afford to send more than half their ships to fight us, if that be true, then have we not an abundant Navy to protect us?

Secretary DANIELS. I would assume that they would send them in the first instance. Now, Great Britain has 18 battleships of the dreadnaught type, 40 of the predreadnaught type, 9 battle cruisers, 34 armored cruisers, 72 cruisers, 143 torpedo destroyers, 49 torpedo boats, and 72 submarines. The United States has 7 battleships of the dreadnaught type, as against 18; we have 24 of the predreadnaught type, as against 40. We have 11 armored cruisers, as against 34; 14 cruisers, as against 72; 46 torpedo-boat destroyers, as against 143; 18 torpedo boats, as against 49; and 25 submarines, as against 72. England's shipbuilding program for the year 1913-14 is 5 battleships, 8 cruisers, 16 destroyers, a group of submarines, and 2 river gunboats, which would show that they are superior in numbers, and in building program Great Britain is ahead of us.

Mr. WITHERSPOON. Mr. Secretary, I did not ask you to compare our Navy with Great Britain's, because I know that she has a great many more ships than we have, but I am just asking you about a single point. Great Britain has built and building, including all types, 72 battleships.

Mr. TALBOTT. You asked if we could have them all at one point?

Mr. WITHERSPOON. We can have them all at home, where they should be.

Mr. TALBOTT. All at one point and engaged in a conflict?

Mr. WITHERSPOON. Certainly we can, but it would be foolish to do it, because you could not use them all. That is what the naval officers tell me, and I think it is a fact.

Mr. Secretary, the British Navy has 72 battleships and half of that number is 36, which is 3 less than we have. If Admiral Vreeland is right in his statement that she could not afford to send more than

half of her fleet, will you not concede that our fleet would be amply able to protect us against any assaults from Great Britain?

Secretary DANIELS. If you have a war you never send anything except the very best and the newest you have.

Mr. WITHERSPOON. I do not know about that. In Manila Bay we did not have the best and newest.

Secretary DANIELS. That is exactly the point I make. You will have a part of them on the Pacific and a part on the Atlantic, and it is very difficult for a country as big as ours and so widely separated from ocean to ocean to have all the ships at one place, whereas in Germany and England they keep their ships nearer together than we do.

Mr. WITHERSPOON. The question I asked was this: Half of the English battleships is 36, which is 3 less than we have, and if Admiral Vreeland is right that she could not afford to send them, do you not think that we have enough to defend ourselves?

Secretary DANIELS. I would say that in any war the only ships that are absolutely certain to be effective are the latest and best ships. The others make the reserve and second line, but you have to have the dreadnaughts, the very last word in construction, to be certain of victory.

Mr. WITHERSPOON. Taking the latest and best ships, suppose England should send them, who has the best and the most powerful ships.

Secretary DANIELS. No country has better ships than the *Wyoming* and the latest types.

Mr. WITHERSPOON. Have we not better ships than any ship in the English Navy?

Secretary DANIELS. I take it that both countries are building the very best.

Mr. WITHERSPOON. Let us see about that. Turn over to page 830. In the dreadnaught type does it not appear there that the biggest ship in the British Navy has a tonnage of 23,000 tons?

Mr. BRITTEN. Built or building?

Mr. WITHERSPOON. Dreadnaughts built.

Secretary DANIELS. Twenty-three thousand tons at the time this book was printed, but they are now building 27,500 tons.

Mr. WITHERSPOON. It is a fact there that the largest dreadnaught built in England is 23,000 tons?

Secretary DANIELS. Recently, since this book was printed, they have commissioned one or two ships, I think, larger than that.

Mr. WITHERSPOON. We have commissioned some, too; but I am just speaking with reference to this book.

Secretary DANIELS. In this book the largest is 23,000 tons.

Mr. WITHERSPOON. Turn over to ours and state if it is not a fact that the largest dreadnaught that we have completed is 27,000 tons.

Secretary DANIELS. The *Texas*, but she is not yet completed.

Mr. WITHERSPOON. And then we have two of 26,000 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. There are three dreadnaughts completed that have a tonnage, the largest one of 4,000 tons and the smaller ones of 3,000 tons each, greater than any dreadnaught that England has built now. Is not that so?

Secretary DANIELS. Those are the figures.

Mr. WITHERSPOON. Comparing the dreadnaughts that are building, is it not a fact that the largest dreadnaught that England is building has a tonnage of 27,500 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Turn over to ours and tell me if it is not a fact that the largest dreadnaught that we have building has a tonnage of 31,400 tons and we have two of them, or, in other words, 4,000 tons larger than the biggest dreadnaught that England is building?

Secretary DANIELS. Nearly 4,000 tons; not quite.

Mr. WITHERSPOON. It just lacks 100 tons?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. In addition to that we have two other dreadnaughts of 27,500 tons each, equal to the two largest of England?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. We have two dreadnaughts now building that are equal in tonnage to the largest dreadnaughts in the English Navy, and then we have two of 3,900 tons larger. Is not that true?

Secretary DANIELS. Yes; but I wish to point out that it is not proper for us either to minimize the German Navy or to exaggerate the power of our own. The converse of the proposition is equally true. Underestimation as well as overestimation are alike fatal. For years the United States Navy was ahead of the German, until by a continuous building program on her part and a lapse in ours she has, at some time between 1909 and 1911, forged ahead. It is the duty of our naval officers to watch such developments all over the world and to counsel the Secretary accordingly. I have elsewhere in these hearings indicated the process by which I have arrived at the conclusions forming the basis of my estimates. I invite attention to the following extract from my annual report for the current year:

The wise naval policy for the United States at this time is to find the golden mean. It can not wisely, by itself, reduce the construction of dreadnaughts or compete with other great powers in burdening taxpayers to hasten the construction of a navy larger than our conditions demand. The estimates of the Navy Department show a decrease in the ordinary expenditures. The program of the department may be summed up in the phrase, "More money afloat and less ashore." I therefore recommend the authorization by the present Congress of the following building program: Two dreadnaughts, eight destroyers, three submarines.

This is not, it will be observed, a large program, but it is a progressive one. It meets the demand to go forward in the continuation of "an adequate and well-proportioned Navy." We have now under construction six battleships of the largest and most approved type. The *Texas* is now practically completed, but will not join the fleet until the new year. The *New York* will be commissioned next spring, and within two years we will, besides the *Texas* and *New York*, add to our fleet the powerful *Pennsylvania*, *Oklahoma*, *Nevada*, and *No. 39*. With the authorization of two of the largest battleships ever constructed before the close of the present administration the United States will have enough ships to have always a creditable and capable fleet in both the Pacific and the Atlantic Oceans. These, together with the smaller ships under construction, will make the American Navy one of strength and power, ready for the protection of American shores and American interests. A steady building program of advancement from year to year will be necessary to give us an "adequate Navy," the goal of American needs and desires. Of the smaller craft we now have under construction the following: Seventeen destroyers, 1 destroyer tender, 21 submarines, 2 submarine tenders, 2 fuel ships, 3 gunboats, 1 transport, and 1 supply ship.

If the present Congress authorizes the two dreadnaughts, eight destroyers, and three submarines recommended, the country will have a "well-proportioned"

Navy, and future additions can be made year by year to add to the effectiveness of the fleet or fleets. Those who bid us stand still in construction will not approve this conservative program. Those who wish to hasten more rapidly in construction will not give it their approval. It has been recommended, after mature consideration, as a middle course of wisdom. "It is a condition and not a theory that confronts us." The revenues of the country do not permit as large an expansion in naval building as the department might desire to enter upon at this time. In its recommendations it has kept in view the probable revenues and other demands and placed the new construction at the very lowest program that could meet the needs of the country or carry out the pledges made to the voters.

It is not believed it is dealing honestly with Congress to make large estimates in the expectation that the national legislators will use the pruning knife. I have reduced the building proposed by the General Board (see report in appendix) not because of opposition to the progressive plans of that able body of naval statesmen, but because it is deemed wise to suggest a budget that will be within the resources of our Government. It is the duty of the naval experts to make such recommendations as their experience and training dictate. It is the duty of the head of the department to urge only such appropriations as it is believed Congress can grant within the limits of the country's probable income. That has been the controlling motive in all the recommendations which are contained in the estimates for the Navy Department.

(Thereupon the committee adjourned to meet to-morrow, Wednesday, February 4, 1914, at 10.30 o'clock a. m.)

THE COMMITTEE ON NAVAL AFFAIRS,
Wednesday, February 4, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF THE
NAVY—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us this morning again the Secretary of the Navy. When we adjourned yesterday Mr. Witherspoon was asking the Secretary some questions. You may proceed, Mr. Witherspoon.

Mr. WITHERSPOON. Mr. Secretary, we were talking about the largest English ships, and I believe we had compared the tonnage of those ships with the tonnage of the largest American ships, and ascertained that our largest ships were 3,900 tons larger than the largest ships in the English Navy. You will notice, Mr. Secretary, at the bottom of page 830 that the tonnage of the largest English ships is 27,500 tons. You remember that?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. I will ask you to turn over to page 831 and see if you do not find the last five English dreadnaughts that are building to have a tonnage of only 26,000 tons?

Secretary DANIELS. They are the figures here in the book.

Mr. WITHERSPOON. That is 5,400 tons less than our two largest battleships?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. It looks like England is going backward in the size of her ships from that, does it not?

Secretary DANIELS. Yes; they are smaller than those we are building.

Mr. WITHERSPOON. They are 1,500 tons smaller than some of the older ones that England has authorized?

Secretary DANIELS. Yes; that much smaller than the *Barnham* and *Valiant*.

Mr. WITHERSPOON. Comparing the English dreadnaughts with ours, in point of guns, you find that in the case of many of the English ships that are built the largest gun on any of them is 13.5 inches. Is not that so?

Secretary DANIELS. No; eight 15-inch.

Mr. WITHERSPOON. You did not understand my question, Mr. Secretary. On all of the English dreadnaughts that are now built, the largest gun is 13.5 inches; is not that so?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. While we have two dreadnaughts now completed, the *Texas* and *New York*, both of which have 14-inch guns?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. You spoke of England having some 15-inch guns. How many guns has each one of the English dreadnaughts now building whose caliber is 15 inches—only eight, is not that so?

Secretary DANIELS. Ten, I think.

Mr. WITHERSPOON. Look at the bottom of the page where you found the 15-inch guns; does it not state that each one has eight 15-inch guns?

Secretary DANIELS. Eight 15-inch guns.

Mr. WITHERSPOON. Each one of the English ships that is supplied with 15-inch guns has only eight guns?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Turn to our largest guns, and you find that four of our ships are supplied with ten 14-inch guns and two of them are supplied with twelve 14-inch guns?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Comparing the largest English ships with ours in point of guns we have six more large guns on each of our ships than England has, is not that true?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Mr. Secretary, looking at it in point of armament, you would not say that we are so inferior to England, would you?

Secretary DANIELS. Well, in those particular ships which you speak of we are not. When you take the whole number of English dreadnaughts built and building, we are.

Mr. WITHERSPOON. We agreed in the beginning and there is no controversy between us that England has a great many more ships than we have—twice as many—and, so far as the number is concerned, there is no difference between us; but I asked you this question, taking into consideration the fact which the representative of the General Board stated here, that if we had a war with England she could not afford to send more than half of her ships against us, if we would not have plenty of ships to protect ourselves, and you replied that if that was done, England would send her largest and most powerful ships?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. That was your reply?

Secretary DANIELS. At first.

Mr. WITHERSPOON. When we come to consider her more powerful ships we find that they are far inferior to ours in tonnage and in armament both; is not that so?

Secretary DANIELS. You will find that she has so many more. I did not agree that she would send only half. I agreed in the first instance that she would not send all she had, but would send the last one if in a war.

Mr. WITHERSPOON. I was examining you on the supposition that the representative of the general board before this committee, the board of experts on which you say you rely, I was examining you on the supposition that what he said was the truth; that is, that the relations of those foreign Governments were such that no one of them could afford to send more than half their ships here, and you said, in answer to me, that if that was so, why, England has very much more powerful ships, but when we look into that we find that her ships are inferior to ours in tonnage and in armament. Do you still contend that England could just pick out her best ships and send them against us, and that we would not have ships powerful enough to resist her?

Secretary DANIELS. She has 18 dreadnaughts and we have 7. She could send all the 18 against the 7. I should hate to go up against that.

Mr. BRITTEN. How about her building program of dreadnaughts!

Secretary DANIELS. She is building—

Mr. WITHERSPOON (interposing). **Mr. Chairman,** I make the point of order that I am examining the witness.

Mr. TALBOTT. You are not examining a witness.

Mr. WITHERSPOON. The Secretary. I did not mean any disrespect by it.

Mr. BRITTEN. You should proceed fairly.

Mr. WITHERSPOON. Do you mean to say that I have done anything unfair?

Mr. BRITTEN. No.

Mr. WITHERSPOON. Well, do not say it if you do not mean it. I object to this interruption.

Mr. HENSLEY. **Mr. Chairman,** I want to say right in this connection, and I say it with the kindest purpose, that there have been interviews given out by Judge Witherspoon, myself, and others, who have certain rights on this committee, which have been considered insulting to the representatives of the Navy, the Secretary, and others who have appeared here. Now, **Mr. Chairman,** I want to say for myself, and I think I can say it with the same emphasis for Judge Witherspoon, that there has been no thought of being offensive or insulting to anybody.

Secretary DANIELS. I never thought so.

Mr. HENSLEY. I have not the faintest idea that there is any thought in the mind of the Secretary that we have had a purpose of that kind, and I want to say that I have not the faintest idea that Admiral Vreeland in any particular took offense at any questions which were propounded to him. I do not know whether these gentlemen who are giving out interviews to the papers have a brief for certain gentlemen or what the purpose is, but I submit that it is not exactly the courtesy that is due members of this committee and Members of Congress.

The CHAIRMAN. Let us proceed. Do not interfere with the questions of Judge Witherspoon.

Mr. BRITTEN. Mr. Chairman, inasmuch as I am directly responsible for this little argument, or whatever it might be called, being brought up, I want to call the chair's attention to my reason for interrupting the judge or asking the Secretary a question. In the newspapers of yesterday Mr. Hensley refers to a statement purporting to be from Mr. Hensley and Mr. Witherspoon, in which—

The CHAIRMAN (interposing). We do not wish to go into such controversies.

Mr. BRITTEN. Then I will not refer to it further except merely to say that the judge in asking the Secretary a certain line of questions will say, "Is not our smallest dreadnaught superior to the British or the German smallest dreadnaught?" Answer, "Yes, sir." That is all he cares to know. Then he will ask, "Is not our largest dreadnaught superior to the largest dreadnaught of Germany?" Answer, "Yes, sir; it is." That is all he cares to know. He does not bring out the fact that they are superior in numbers by 100 per cent, or 200 or 300 per cent, as in the case of England. He merely brings out the fact that our smallest dreadnaught is superior to their smallest and our largest ship is superior to their largest. That is not fair to the other members of the committee, who are anxious to secure information.

The CHAIRMAN. You can get the information after the judge finishes his questions.

Mr. WITHERSPOON. Mr. Secretary, I asked you, in view of the fact that for 24 years we have been increasing our Navy at the rate of one and one-third battleships a year, and in view of the fact that for 24 years we have been investing \$9,000,000 a year in battleships, and in view of the fact that one of the battleships we are now building costs three times as much as those we had when we were building our Navy, and in view of the fact that we now have a very powerful Navy, if you thought that we ought to increase it more rapidly in the future than we had increased it in the past, and your reply was that on account of the action of foreign Governments in increasing theirs that we ought to do so. Now, that answer, Mr. Secretary, is based on the assumption that if we were to quit building battleships the foreign Governments would not follow our example, but they would continue to increase theirs. Is not your answer based on that assumption?

Secretary DANIELS. Well, I think this, that we can not be guided in our course solely by what other nations are doing. Last year we only built one battleship, and that did not affect at all the other nations, because they went on and built more than ever.

Mr. WITHERSPOON. Your answer is not responsive to my question. I will put it in another form: If foreign Governments should quit building battleships, would you be in favor of quitting building them?

Secretary DANIELS. I would be in favor of reducing the expense of building them if we could get an international agreement to that effect.

Mr. WITHERSPOON. I am talking about battleships. If foreign Governments would not build any more, would you be in favor of us not building any more?

Secretary DANIELS. I would be willing to enter into an agreement with them. I think that is a fair answer. I do not think we can do by ourselves. If I knew they would quit, I would be in favor of the Navy being kept up and in building only as is necessary.

Mr. WITHERSPOON. If you knew that foreign Governments would be building battleships, you would still be in favor of building more?

Secretary DANIELS. I would love to see all the nations reduce their armament and expenditures for navies, but we can not act by ourselves.

Mr. WITHERSPOON. What I am trying to get at is to understand your meaning. Do I understand you to mean that if you knew they were not building any more you would still be in favor of building more?

Secretary DANIELS. No; I should not if I knew that.

Mr. WITHERSPOON. We have found out that the foreign Governments have been following our example all the time, have we not, in this investigation?

Secretary DANIELS. I do not think so.

Mr. WITHERSPOON. Did we not find out that Germany did not have a battleship on the ocean for eight years after we authorized three?

Secretary DANIELS. I do not recollect whether we found that out.

Mr. WITHERSPOON. Look at the German table and see if she did not put her first battleship on the ocean in 1898.

Secretary DANIELS. Do you mean that Germany followed our course?

Mr. WITHERSPOON. Yes, sir; followed it in everything. Is not that a fact?

Secretary DANIELS. It may be as to this one matter.

Mr. WITHERSPOON. I am going to ask you about the other matters.

Secretary DANIELS. I do not think that she followed us, but followed her own policy.

Mr. WITHERSPOON. We authorized three battleships in June, 1890, and Germany did not have a battleship on the ocean until 1898. That looks like she had followed our example in that respect.

Secretary DANIELS. My theory about Germany is that her policy has not been influenced by our policy.

Mr. WITHERSPOON. That does not answer my question at all.

In point of size of the ships, we have ascertained that from the beginning to the end we were constantly building ships of larger tonnage than Germany and that Germany is now 3,900 tons behind us in the size of ships. Has she not been following us in that respect?

Secretary DANIELS. I believe she is building more ships. Her experts tell her that she had better build more and not so powerful ships.

Mr. WITHERSPOON. I have asked you about the number and about the tonnage. Did not you and I find out from the Navy Yearbook that all through the two lists—the German and United States lists—the tonnage of the American ships has been constantly ahead and that we are still ahead 3,900 tons?

Secretary DANIELS. But in discussing what one country has in the way of ships you must take everything it has, not a few.

Mr. WITHERSPOON. I am going to take everything, but I can not take them all at the same time.

Secretary DANIELS. In these particulars you are right.

Mr. WITHERSPOON. In regard to armament, we found that we are building ships with bigger guns than Germany all the time; we found that out?

Secretary DANIELS. We did in certain particulars; I do not know about all the time.

Mr. HOBSON. Mr. Chairman, is there any limit put upon the cross-examination of Mr. Witherspoon?

The CHAIRMAN. No.

Mr. WITHERSPOON. I will ask you if it is not a fact that down to the last two ships Germany has built, each one of which has eight 15-inch guns, down to that time we had been building larger guns than Germany?

Secretary DANIELS. Yes; on our dreadnaughts.

Mr. WITHERSPOON. Is it not a fact, Mr. Secretary, that in point of the expenditure of money we have been away ahead of Germany all the time?

Secretary DANIELS. I have not gone over those figures.

Mr. WITHERSPOON. We went over the figures the other day, and it appeared—

Secretary DANIELS (interposing). You will find this, that whenever you go into the expenditure of money that the pay of our men and officers is very much greater than anywhere else and it is difficult to make a comparison.

Mr. WITHERSPOON. I am just talking about the amount of money. Has not Germany been away behind us in the amount of money we have spent?

Secretary DANIELS. She has spent less money.

Mr. WITHERSPOON. And now we are \$30,000,000 ahead of Germany in the amount of expenditures for the Naval Establishment?

Secretary DANIELS. Where is that?

Mr. WITHERSPOON. On page 838.

Secretary DANIELS. These tables show that Germany has right along spent less money than we have.

Mr. WITHERSPOON. And in a great many years spent half as much as we have?

Secretary DANIELS. In some years; yes.

Mr. WITHERSPOON. And on the whole—we had the column added up the other day—she has spent in the last 13 years \$400,000,000 less than we have. The clerk added this up on the adding machine, and he gave it to you the other day, and you took it as correct?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Then in the last appropriation ours is \$29,000,000 more than Germany's. In the matter of expenditures Germany has been following behind us?

Secretary DANIELS. She has been behind us.

Mr. WITHERSPOON. If Germany and these other nations have been following behind us in the date we began to build battleships, in the tonnage of the battleships, in the armament of the battleships, and in the expenditures on account of the battleships, then they are following our example in every respect, and is it not reasonable to suppose that if we should quit building battleships they would follow us?

Secretary DANIELS. Germany is building now and she is going ahead of us.

Mr. WITHERSPOON. We have already discussed that question, whether she was ahead of us. Mr. Secretary, I have just a few more questions to ask you. I am sorry that I have taken up so much of your time. I want you and I to get together. I know that we have the same purpose.

Secretary DANIELS. That is right.

Mr. WITHERSPOON. And there is just a difference as the means?

Secretary DANIELS. That is right.

Mr. WITHERSPOON. The report of the Chief of the Bureau of Supplies and Accounts, the Paymaster General, shows that we have a balance of stores, ammunition, supplies, and everything that the Navy uses, amounting to \$1,770,000,000, which we are carrying all the time; that we have \$100,000,000 invested in navy yards; that we have battleships that have cost us \$220,000,000; that we have armored cruisers that cost us \$66,000,000, and that we have been appropriating now \$140,000,000 a year. Considering all that, do you not think that the administration of this Navy is very extravagant?

Secretary DANIELS. I would not say that at all. I have not had long enough opportunity to study the economies in order to be able to answer that. I think the tendency in all Governments is to be uneconomical.

Mr. WITHERSPOON. And especially in ours?

Secretary DANIELS. I think it is so certainly in all governments, State and National.

Mr. WITHERSPOON. Mr. Secretary, have you had time yet to study the question and to get into your mind any reasonable explanation of the fact that we have spent more than a billion dollars in excess of what Japan has spent and \$400,000,000 in excess of what Germany has spent in the last 13 years, and still they tell us with all that expenditure that our Navy is inferior to Germany, have you tried to find out why that is so?

Secretary DANIELS. Whenever you begin to discuss the expenditures of the Navy you have got to remember that pay in our Navy is very much more than any other navy pay. Our costs for men and officers, and by our expenses by reason of our retirement, etc., are very much larger.

Mr. WITHERSPOON. Mr. Secretary, you stated a while ago that we pay our men more than they do in foreign countries as one explanation. It is a common thing when any wrong appears—

Secretary DANIELS. (interposing). I was not speaking only of the pay of the men, I was speaking on that line.

Mr. WITHERSPOON. You refer to the men, and it is a common thing to lay all the wrong on the shoulders of the laborers, but your Paymaster General's report shows that the total amount we spend on labor is \$22,000,000, and if you take that from \$140,000,000—just knock out the whole labor account—it still leaves \$118,000,000, which is \$7,000,000 more than Germany spends. So, that does not explain it.

Secretary DANIELS. I think it is our duty, certainly I feel it my duty, to consider every item of expenditure and see wherein we can make economies. That is what I have been doing since I have been in office.

Mr. WITHERSPOON. There is just one other question, not for you to answer, but I want to make a request of you, and that is this: In my study of the Navy I have come to the conclusion that the reason

why we are wasting so many million dollars and making our Navy cost so very much more than other nations is that our work is not concentrated at one or two points, as it is in foreign governments, but scattered through a multitude of navy yards, naval stations, training stations, and coaling stations, for every one of which you have to have a separate power plant, you have to have separate dry-docks, you have to have a duplication of machinery, and some of the naval officers tell me it is ten times as much as it would be if you had the work concentrated at one point. You have to have duplication of railroads in the navy yards, you have to have a duplication of sea walls, and everything in the Navy is duplicated, in my judgment, ten-fold because of the scattered way our work is done. What I want to request of you is that you have your experts examine into that, and a year from now I would like you to tell us how much that increases the expenses of the Navy, and how much less it would be if the work was concentrated at one point.

Secretary DANIELS. It has been my purpose this spring and summer to make a critical study of the navy-yard management in the hope that I could present next December the result of that study, which might effect saving and betterment of work.

Mr. WITHERSPOON. That is all.

Mr. BUCHANAN. Mr. Secretary, have you taken the time to read the statement by the naval constructors in regard to the management of the yards?

Secretary DANIELS. I have read some of the statements.

Mr. BUCHANAN. I will not take the time to read them. Some of them contain what I consider the meat of the coconut in the management of the yards. You can not mix the military management with the industrial management with any success, and in my judgment it does not get the results which are intended. In other words, when you put a line officer whose idea probably is to become the head of Navy, he either is not sufficiently interested or does not have the time to study the industry sufficiently to equip himself to manage that part as it should be managed, and, in my judgment, it does not give him the information or experience intended by putting him in such a position as manager. I believe it would be better if he were subordinated to a really capable, well-qualified manager. It is so clear to me—I know your purpose is just as good as mine or anyone else's in trying to direct the forces of your department in an efficient and proper manner—in my judgment this mismanagement has obstructed the progress of construction work in the navy yards and has disorganized the men and at times put them in an unhappy condition, and, of course, the responsibility is usually put on the tired shoulders of the men who do the work. I think that is most important, and I think that we could save at least the price of a battleship a year.

I have taken an interest and made some private investigations, besides going around with the Naval Affairs Committee to get what information I could, and I am thoroughly convinced that the present management is costing this Government—I do not think anybody can estimate it properly, but I would not be surprised if it cost this Government the price of a battleship a year, this mismanagement in the affairs of the navy yards in construction. I would like to ask whether or not you have given this matter consideration and whether

or not you are going to make a change to do away with the great loss that is a discredit, in my opinion, to the administration of any Government. No industrial establishment would permit that kind of management much longer than it would take them to learn of it. I want you to understand that I do not differ with those who say that our line officers should have experience, but I do differ when they claim that they will get proper instruction when put in supervisory positions. I do not think that they are qualified to supervise this work. I think such a man should put on a pair of overalls and go to work as an apprentice and come up by practical experience to enable him to get information to qualify to direct repair work necessary in case of breakdown of machinery at sea.

Secretary DANIELS. I have given a great deal of consideration to it. It is a big question, a very big question. I have very many big problems to study. I have studied it a great deal and some of what you say I have felt, but the value of having naval officers learn all about the work in a navy yard can not be overestimated, because more and more our ships are away from the navy yards and they must be repaired afloat and the men who are in command of the ships need have to have the best knowledge.

Mr. BUCHANAN. I agree the line officers should have experience but am opposed to putting them in a supervisory position to train them, and think it would be better to put them in a subordinate position under somebody who does know.

The CHAIRMAN. Mr. Buchanan, that is a question we will have to discuss when we take up the personnel bill.

Secretary DANIELS. That is a very big question, and as I said to Judge Witherspoon, I have been studying it a great deal. I hope to be able to come to conclusions that I think are really worth consideration after a little more time and study.

Mr. WILLIAMS. Mr. Secretary, the number of battleships is a question of policy, merely a question of policy, what is wisest and best?

Secretary DANIELS. Yes.

Mr. WILLIAMS. Is not the greatest question that we have to deal with the business management of our navy yards and stations?

Secretary DANIELS. That is a very big question.

Mr. WILLIAMS. Is not that one which will give your department the most concern in reaching correct results and conclusions?

Secretary DANIELS. Undoubtedly.

Mr. WILLIAMS. I agree with Judge Witherspoon and Mr. Buchanan, and I would be pleased to have you give us special information and a report along that line a year from now.

Secretary DANIELS. I will do so.

Mr. BUCHANAN. Do I understand, Mr. Secretary, that you are going to take up this matter and decide it in the near future, the question of reorganization?

Secretary DANIELS. I can not decide it without congressional action, as I understand it.

Mr. BUCHANAN. That is the reason why I wanted to know.

The CHAIRMAN. There are certain matters which you can yourself arrange without congressional action.

Mr. BUCHANAN. I think it should come from the Secretary of the Navy.

Secretary DANIELS. We are putting in some work that will give us better information, and I hope by December to be able to present a plan.

Mr. BUCHANAN. Next December?

Secretary DANIELS. Yes.

Mr. BUCHANAN. Don't you think, when there is a possible waste of as much as I spoke of—of course I may be mistaken—I have had a great deal of experience in construction work and I have sought information on my own account from engineers who, I think, probably are better qualified to know than I, and they agree with me that the loss probably is beyond one's estimation—do you not think a question that is so important as that where we could probably save millions of dollars a year should not be postponed until next December?

Secretary DANIELS. I do not think there is so much waste as would be indicated. I think there are changes which can be made of betterment and economy, but in many ways we do things in the navy yards cheaper than outside. We can make some things.

Mr. BUCHANAN. But you do not get the books of the outside manufacturers. They do not let you know what it costs them. That is my information. You do not know the real cost of the work outside. They give you figures, that is true. However, it is claimed that it costs more to build battleships in the yards than outside, a great deal more.

Mr. HENSLEY. I wish to make an inquiry. The other day I submitted to the Secretary some written questions—

Secretary DANIELS (interposing). I have answered them.

Mr. BUCHANAN. Do you not think there is any waste?

Secretary DANIELS. I did not say that. I do not think there is a great waste. Of course, I do not mean that we can not make economies, and I think we can. I do not mean to say that we can not make changes which will be important.

Mr. BUCHANAN. I inferred from what you said that you intend to maintain the military management.

Secretary DANIELS. I think we can make changes, but I have not cared to commit myself, because I am not certain. I have in mind that we could make a change by which we would have the military in control of everything that was military.

Mr. BUCHANAN. That is right.

Secretary DANIELS. And have the work under the control of men who are not military men.

Mr. BUCHANAN. I am talking about the industrial work.

Secretary DANIELS. I have in mind a plan by which we may separate the two.

Mr. BUCHANAN. That is my idea, to have the line officers direct the military affairs, authorize what work is to be done, but not interfere with the industrial management of the work.

Secretary DANIELS. Under the present law, Mr. Chairman, suppose I should be persuaded that civilian management would be better in a yard and desire to try it, could I do so without congressional action?

The CHAIRMAN. Not outside civilian management, but you could utilize the construction corps.

Secretary DANIELS. I may be able in some of the yards to try out the plan and by December be able to show the committee.

Mr. BUCHANAN. Suppose in trying it some of the military force in the department should exert an influence to make it a failure?

Secretary DANIELS. That is impossible.

The CHAIRMAN. If I can have a little opportunity I would like to submit some matters to the Secretary.

Mr. Secretary, much has been said about the Navy Yearbook. I want to put in the hearings that the Navy Yearbook is not a publication of the Navy Department, but is a Senate document; that heretofore it was for years prepared by Mr. Pulsifer, the clerk of the Committee on Naval Affairs of the Senate, and is now prepared, since the death of Mr. Pulsifer, by Mr. Knight, the clerk of the Naval Committee in the Senate, and is published as a Senate document and is not published by the Navy Department?

Secretary DANIELS. That is a fact.

The CHAIRMAN. Mr. Secretary, I have here a statement published by the Navy Department in the Office of Naval Intelligence. It appears from that statement that Germany has built 18 dreadnaughts and four battle cruisers, making 17 capital ships built with a tonnage of 874,644 tons. Including the *South Carolina* and the *Michigan*, which for purposes of comparison I am including as capital ships, at the present time the United States has nine built with a tonnage of 194,650 tons. Germany has building six battleships and three battle cruisers, making nine capital ships building, with a tonnage of 246,300 tons, and the United States has building five, with a tonnage of 144,800 tons. Combining the two Germany has capital ships built and building 26, with a tonnage of 620,944 tons, and the United States has, including the *South Carolina* and the *Michigan*, 14, with a tonnage of 399,450 tons. That appears from this statement, does it not?

Secretary DANIELS. It does.

The CHAIRMAN. A few years ago the statements issued from the Office of Naval Intelligence placed the United States as No. 2 in the list of naval powers. At the present time it places the United States as No. 3?

Secretary DANIELS. Yes.

The CHAIRMAN. The total tonnage of Great Britain is 2,072,711 tons; Germany, 943,338 tons; and the United States, 760,002 tons. As it would be if the vessels now building were completed, England would have 2,611,291 tons; Germany, 1,228,208 tons; and the United States, 921,844 tons. That appears in this statement?

Secretary DANIELS. Yes; gotten out by the Naval Intelligence Office.

The CHAIRMAN. Now, taking the *South Carolina* and the *Michigan* out of the battleship class, and for the purposes of comparison including them in the dreadnaught class, the United States has built 22 battleships, with a tonnage of 303,284 tons?

Secretary DANIELS. That is right.

The CHAIRMAN. And Germany would have 20 battleships, with a tonnage of 242,800 tons?

Secretary DANIELS. That is right.

The CHAIRMAN. Now, referring to the battleships that are in this class of the 24, leaving out the *South Carolina* and *Michigan*, we

have the *Alabama*—I have a book issued by the Naval Intelligence Bureau, Ships' Data, and they are the battleships described as ships of the second line—the *Alabama*, *Illinois*, *Indiana Kearsarge*, *Kentucky*, *Massachusetts*, *Oregon*, and *Wisconsin*, making eight in all, and each and all of them have four 13-inch guns, 35 caliber, it appears from that statement?

Secretary DANIELS. Yes.

The CHAIRMAN. The *Iowa* has four 12-inch guns, 35 calibers, has it not?

Secretary DANIELS. Yes.

The CHAIRMAN. The *Georgia*, *Maine*, *Missouri*, *Nebraska*, *New Jersey*, *Ohio*, *Rhode Island*, and the *Virginia*, making eight other ships, have each and all of them four 12-inch 40-calibers guns, have they not?

Secretary DANIELS. Yes.

The CHAIRMAN. Now, the improved 12-inch gun is 50 calibers, is it not?

Secretary DANIELS. Yes; it is.

The CHAIRMAN. I want to call your attention to another statement, "Elements of United States naval guns," prepared by the department, and ask you to examine it, showing that the 13-inch 35-caliber gun at 9,000 yards range has a penetration of 8.1 inches and the 12-inch 50-caliber gun has a penetration of 16.4 inches at 9,000 yards. That is correct?

Secretary DANIELS. Yes.

The CHAIRMAN. So that the penetration of a projectile in a 13-inch 35-caliber gun—that is, upon eight of our old battleships—is less than one-half of the penetration of a modern 12-inch gun at the battle range of 9,000 yards?

Secretary DANIELS. It is.

The CHAIRMAN. I want to call you attention to the fact that a 12-inch 35-caliber gun at 9,000 yards has a penetration of 7.2 inches.

Secretary DANIEL. That is correct.

The CHAIRMAN. As against 16.4 inches in face-hardened armor at a battle range of 9,000 yards. That is the condition of the guns on the *Iowa*, is it not?

Secretary DANIELS. Yes.

The CHAIRMAN. I want to call your attention to the 40-calibers 12-inch guns. We have eight battleships with 12-inch 40-calibers guns. At 9,000 yards the penetration of the 40-calibers gun is 12.2 inches, as against 16.4 inches for the modern 50-calibers gun, is it not?

Secretary DANIELS. Yes.

The CHAIRMAN. Now, I will ask you to state, Mr. Secretary, in an engagement of what service would a battleship equipped with those guns be as against a battleship equipped with modern 12-inch guns at 9,000 yards? It would be a plaything?

Secretary DANIELS. We would not send the one against the other.

The CHAIRMAN. That would be sensible.

Now, Mr. Secretary, I want to ask you another question. Something was said about the *Oregon*, the *Indiana*, and the *Massachusetts* not being included in the list as published. I will ask you if in the

publication by the Navy Department the following note does not appear:

Ships over 20 years old from date of launch, unless they have been reconstructed and rearmed within 5 years, are not included in the table?

Secretary DANIELS. Yes.

The CHAIRMAN. I will ask you to turn to this book, *Ships' Data*. It appears that the *Oregon* was launched October 26, 1893?

Secretary DANIELS. That is the date.

The CHAIRMAN. The *Indiana* was launched February 28, 1893?

Secretary DANIELS. That is right.

The CHAIRMAN. The *Massachusetts* was launched June 10, 1893?

Secretary DANIELS. Yes.

The CHAIRMAN. So that all three of those ships were launched more than 20 years from the date of the issue of this table?

Secretary DANIELS. They were.

The CHAIRMAN. And in the note it is stated plainly upon the face of the table the reason why they were not included?

Secretary DANIELS. Yes.

The CHAIRMAN. Have they been reconstructed and rearmed within five years?

Secretary DANIELS. No.

The CHAIRMAN. In these comparisons I have made I have included the *South Carolina* and the *Michigan* for purposes of comparison in the dreadnaught class. They are enumerated in the dreadnaught class. I will ask you to state why they are not included in the dreadnaught class in the present table?

Secretary DANIELS. All the nations have agreed that a dreadnaught must have a speed of 20 knots, and unless they have that speed they are not regarded as dreadnaughts.

The CHAIRMAN. What is the speed of the *Michigan* and the *South Carolina*?

Secretary DANIELS. The *Michigan* is 18.79 knots and the *South Carolina* 18.86 knots.

The CHAIRMAN. I will ask you to turn to page 832 of the Navy Yearbook and state if every vessel that is included in the dreadnaught type of the German Navy has not a speed of 20 or more knots per hour?

Secretary DANIELS. Every one.

The CHAIRMAN. I will ask you to state what is the tonnage of the *Michigan* and the *South Carolina*?

Secretary DANIELS. Sixteen thousand tons.

The CHAIRMAN. Each?

Secretary DANIELS. Yes.

The CHAIRMAN. I will ask you to state if the tonnage of every vessel of the dreadnaught type in the German Navy is not 18,000 tons or more?

Secretary DANIELS. Eighteen thousand six hundred tons is the lowest, and it goes up to 24,306.

The CHAIRMAN. That is in the completed ships?

Secretary DANIELS. Yes.

The CHAIRMAN. And in the building?

Secretary DANIELS. It goes up to 28,000 tons.

The CHAIRMAN. I will ask you what are the number of guns upon the *Michigan* and the *South Carolina*?

Secretary DANIELS. Eight 12-inch guns.

The CHAIRMAN. I will ask you if upon all of the dreadnaught type of ship in the German Navy, including the built and building, the types of 11 and 12 inch guns are not from 10 to 12?

Secretary DANIELS. Yes.

The CHAIRMAN. And of the 15-inch guns, eight?

Secretary DANIELS. Eight; yes.

The CHAIRMAN. Now, I want to ask you, Mr. Secretary, if the 17 ships to which I called your attention a moment ago and enumerated that have four big guns, if they were in an engagement, what would be the maximum of their broadside fire; could they turn more than four?

Secretary DANIELS. I think not.

The CHAIRMAN. I will ask you to state what would be the maximum of the broadside fire of the ships we have—our modern dreadnaught ships?

Secretary DANIELS. Ten.

The CHAIRMAN. Ten in the broadside fire as against four of these 13 and 12 inch and 35 and 40 caliber guns?

Secretary DANIELS. Yes; and with the two new building, the *Pennsylvania* and *No. 39*, 12 broadside fires.

Mr. BRITTEN. Mr. Chairman, and also, I think, the *Arkansas* and *Wyoming* have 12.

The CHAIRMAN. They are modern ships; I mentioned them.

Mr. Secretary, I will ask you to state what is the speed of the dreadnaughts in the German Navy?

Secretary DANIELS. Those which have been built, 20 and 21 and a fraction knots, and those which are building, 22 and 23 knots.

The CHAIRMAN. What is the speed of the *Illinois*?

Secretary DANIELS. 17.45 knots.

The CHAIRMAN. And the *Indiana*?

Mr. BRITTEN. 15½ knots, Mr. Chairman.

The CHAIRMAN. What is the speed of the *Massachusetts*?

Secretary DANIELS. 16 knots. That is the speed they made, but they do not make that speed now, because they are old.

The CHAIRMAN. The maximum would be 16 knots?

Secretary DANIELS. Yes.

The CHAIRMAN. And the *Oregon*?

Secretary DANIELS. The same.

The CHAIRMAN. If ships of that class with a speed of 16 knots, with the guns that I have described, should either by accident or design come in conflict or within reach of the dreadnaughts of the German Navy, what would be the result?

Secretary DANIELS. I think that the Secretary of the Navy who would send them into such a battle should be impeached.

The CHAIRMAN. Now, Mr. Secretary, the question was asked you if any conditions arose that there was a conflict between England and this country, and England should send one-half of her ships against us; suppose she sent one-half of them and an engagement took place, it is reasonable to suppose, is it not, that a number of our ships would be disabled and rendered unfit for continued service and have to go for repairs, and possibly some of them destroyed?

Secretary DANIELS. Yes.

N. England would have just as many more to send back what we had left?

DANIELS. Yes.

N. Now, Mr. Secretary, the question was asked you to the expenditures in Germany. It appears that we have been spending less than we have been spending as a Navy?

DANIELS. Yes.

N. The fact is apparent from the record, is it not, that the program Germany has far outstripped us?

DANIELS. There is no doubt about that.

N. Both in the aggregate tonnage and when you come to compare the new Navy of Germany with the new Navy of the United States—and by the term “new Navy” I mean the up-to-date fighting ships—Germany has a total of 26 against our 14, has not, built and building?

Secretary DANIELS. That is correct.

CHAIRMAN. I want to call your attention to one other matter that appears in the statement I have here—the collective broadside of the main battery in the dreadnaught ships. The United States has 8—that includes the *Michigan* and the *South Carolina*—with 83,680 pounds of projectiles to be sent in a broadside fire against the enemy's ships. Germany has 17 ships building, and the collective broadside fire of her ships is 129,542 pounds, against the collective broadside fire of the United States dreadnaughts?

Secretary DANIELS. Yes.

The CHAIRMAN. Now, Mr. Secretary, I will ask you if there were a conflict and the 17 capital ships of Germany were engaged in a conflict with the 8 capital ships, including the *South Carolina* and the *Michigan*, of the United States, with that collective broadside fire, what would be the reasonable expectation of such a conflict?

Secretary DANIELS. Germany would have us at a great disadvantage.

The CHAIRMAN. Now, Mr. Secretary, on that part of the examination I have just one other question. Laying aside sentiment, those are cold facts that stare us in the face?

Secretary DANIELS. Yes, they are; facts that compel attention.

The CHAIRMAN. The question of expenditures was asked you a while ago, and Mr. Witherspoon stated that the report of the Paymaster General showed that the total amount paid laborers out of the appropriations for the Navy was \$22,000,000. I will call your attention to the fact that that does not include enlisted men and officers of the Navy, whose pay amounts to something like \$45,000,000—the exact amount appears in the appropriation bill and also in the report. Those two items are not included in the laborers' statement?

Secretary DANIELS. No; they are separate.

The CHAIRMAN. And that statement does not include the civil force that is in the bureaus?

Secretary DANIELS. It does not.

The CHAIRMAN. So that those three items are to be added to the \$22,000,000 to be deducted from the other amount?

Secretary DANIELS. Yes.

The CHAIRMAN. I want to ask you this question: When you consider the fact that although Germany has spent in the aggregate

less than the United States has spent in the aggregate, and when you bear in mind that Germany has built and building 26 capital ships as against 14 in the United States built and building, including the *South Carolina* and the *Michigan* in the capital ship class, does it not simply mean that the cost of production and the cost of wage and the cost of pay to the enlisted men and the officers in Germany is much less than ours, and that they get more for a dollar than we do?

Secretary DANIELS. The pay is very much less.

The CHAIRMAN. I want to ask you if in Germany, in the navy as well as in the army, they do not have the conscript requirement; if they do not have that to keep down their cost as to the navy?

Secretary DANIELS. That is the method they employ.

Mr. BRITTEN. Mr. Chairman, I would like to ask the Secretary some questions along the line asked by Judge Witherspoon yesterday.

Mr. Secretary, in the comparative table of battleships in the 1913 Yearbook, on pages 832 and 833, the table does not include the *Oregon*, the *Massachusetts*, and the *Indiana*?

Secretary DANIELS. No.

Mr. BRITTEN. Each one has a displacement of approximately 10,000 tons. It appears that these ships were completed in 1895; the speed rating of these ships is between 15½ and 16 knots an hour, and each has an armament of four 13-inch guns and eight 8-inch guns—they are sister ships, I suppose. Would you consider any of those ships the equal of the first 10 battleships of the German Navy, all of which have a displacement of 11,000 to 11,600 tons and are from three to eight years younger in the service than our ships, and all of which are from 12 to 20 per cent superior in speed to our ships?

Secretary DANIELS. I would not.

Mr. BRITTEN. Would you compare them in any sense?

Secretary DANIELS. I would not.

Mr. BRITTEN. Allowing this to be true, as is shown by the book, the German ships having four 9.4-inch guns and eighteen 5.9-inch guns, do you consider that the additional speed of from 12 to 20 per cent of the German ships would give them a great advantage over our ships, of the *Oregon*, *Indiana*, and *Massachusetts* type in time of war?

Secretary DANIELS. Undoubtedly.

Mr. BRITTEN. Would not the 22 guns on the more modern German ships be superior to the 12 guns on our ships, even though our guns were of a larger bore? I believe bore is the proper name.

The CHAIRMAN. Caliber, they call it.

Secretary DANIELS. The more modern guns on the German ships would easily be more powerful than the larger guns on the *Oregon*, *Massachusetts*, and *Indiana*.

Mr. BRITTEN. Certainly.

The CHAIRMAN. I want to ask one question which I forgot, if you will permit me?

Mr. BRITTEN. Certainly.

The CHAIRMAN. Mr. Secretary, I want to ask you if in battle maneuver or in battle you had ships of 16, 17, and 18 knots speed maneuvering with ships of 22 or 24 or 26 or 28 knots, if it is not the fact that the higher speed ships would have to reduce their speed

down to conform to the speed of the slower ships, and thereby deprive the fast ships of the benefit of their own speed?

Secretary DANIELS. The speed of the fleet would be the speed of the ships going the lowest speed.

Mr. BRITTEN. Is it probable that the 9.4-inch guns of the German navy that are on the first 10 battleships of the German schedule that has been referred to are greater in range and greater in armor-piercing capacity than the 13-inch guns on the *Oregon*, *Massachusetts*, and *Indiana*?

Secretary DANIELS. I would like to look into that a little. I am not enough acquainted with the facts to answer that question. I will answer it after I get the information. I find this:

The 9.4-inch guns of the German navy have a muzzle velocity of 2,625 foot-seconds, while the 13-inch guns of the *Indiana* have 2,000 foot-seconds muzzle velocity.

The penetration of the American 13-inch gun and the German 9.4 inch is approximately the same, with apparently a slight advantage in favor of the German gun. The exact data for foreign navies is impossible to obtain, but the Germans have all along claimed that their guns of smaller caliber are the equal of the larger guns of the other navies.

Mr. BRITTEN. I would also like your opinion as to a comparison of those three ships with any of the 10 most inefficient of the German ships in efficiency and general fighting ability of the *Kaiser Wilhelm II* class, which I think is the most inefficient of the 10 German ships.

Secretary DANIELS. I would like to answer that later.

The following comparison is between the *Oregon* and the *Kaiser Wilhelm II*:

	Oregon.	Kaiser Wilhelm II.
Launched.....	1893.	1897.
Size.....	10, 288 tons.	10, 790 tons.
Speed.....	16.8 knots.	18 knots.
Battery.....	Four 13-inch .35 calibers. Eight 8-inch .35 calibers. Four 6-inch.	Four 9.4-inch, .40 calibers. Fourteen 6-inch, .40 calibers.
Torpedo tubes	None.	5.

Mr. BRITTEN. Do you think that your department or the secretary of the Senate Committee on Naval Affairs in compiling the tables for the 1913 Yearbook was justified in omitting from this table the *Oregon*, *Massachusetts*, and *Indiana*, while at the same time including the German ships of greater tonnage, more speed, and of more recent construction, applying to the first 10?

Secretary DANIELS. Certainly; I think the three omitted should have been omitted.

Mr. BRITTEN. In the event of war, would you feel at all justified in sending the *Oregon*, *Indiana*, and *Massachusetts* in the first line of battle? Would you not send them in the second line?

Secretary DANIELS. I would not send them at all.

Mr. HOBSON. As a matter of fact, would you send any of them, even including the *South Carolina* and *Michigan*, would you send any of them in the first battle line with a fleet of dreadnaughts?

Secretary DANIELS. No; nothing but the dreadnaughts would be sent.

Mr. BRITTEN. Coming to the dreadnaught class below the battleship class, do you think that the *Michigan* and *South Carolina*, which some of our members seem to think should be in the dreadnaught class, compare in speed, armament, tonnage, and general fighting force with the poorest dreadnaught in the German classification?

Secretary DANIELS. Well, they have 16,000 tons, as against 18,600 tons of the poorest of the German ships; their speed is 18.79 and 18.86 knots, as against the lowest in the German Navy of 20 knots.

Mr. BRITTEN. You think, Mr. Secretary, that they do not properly belong in the dreadnaught class?

Secretary DANIELS. I think the board was right in omitting them.

Mr. BRITTEN. I notice that Germany has already in commission four battle cruisers with a speed of from 28 to 29 knots. Do you consider them as efficient a fighting force as dreadnaughts?

Secretary DANIELS. I should not say they were.

Mr. BRITTEN. Some of the naval authorities consider them as efficient as the dreadnaughts?

Secretary DANIELS. Our naval experts do not.

Mr. BRITTEN. The German Government has 13 dreadnaughts and 4 battle cruisers in commission and 6 dreadnaughts and 3 battle cruisers building. That would give them 26 capital ships, as against our 12—7 in commission and 5 building. In other words, they will have 26 capital ships to our 12 ships, will they not?

Secretary DANIELS. I think that is right.

Mr. HOBSON. Before leaving that point I might ask a question at this time?

Mr. BRITTEN. Yes.

Mr. HOBSON. When the battle cruisers, in proper proportion, cooperate with a dreadnaught fleet, do not experts regard them as comparable with the dreadnaughts in the service they render?

Secretary DANIELS. I do not know, Mr. Hobson. I think they are regarded as very valuable.

Mr. HOBSON. I will mention in that connection that they cost more and experts would not put out a greater cost for a smaller return in efficiency; although they have more expensive machinery they cost more per ton than the dreadnaught.

Secretary DANIELS. That is a mooted question. My understanding is that our experts stand for the dreadnaughts, and I am informed that in England they have stopped building cruisers and have gone back to dreadnaughts, and Germany is building them, too. But that is a mooted question.

Mr. BRITTEN. In the computation of the tonnage of the dreadnaught type and the battle cruiser type, as shown in the Year Book for 1913, I find that Germany has 620,994 tons.

Secretary DANIELS. Where is that?

Mr. BRITTEN. On pages 832 and 833.

Secretary DANIELS. Yes.

Mr. BRITTEN. The total tonnage of the dreadnaughts and battle cruisers of the German Navy amounts to 620,994.

Secretary DANIELS. Is it not 690,770?

Mr. BRITTEN. No. My figures compare with the figures given a while ago by the chairman.

Secretary DANIELS. But in this book it gives the total for Germany at 690,770.

Mr. BRITTEN. That 690,770 that you see there is the entire tonnage, including battleships.

Secretary DANIELS. Oh, yes.

Mr. BRITTEN. I think you will find, Mr. Secretary, that the total tonnage of the dreadnaughts and battle cruisers in the German schedule is 620,994, while the United States tonnage for dreadnaughts, built and building, is 307,453.

Secretary DANIELS. I have not added those figures.

Mr. BRITTEN. Well, they compare with the figures submitted by the chairman a little while ago, indicating or showing positively that the German Navy, in battleships built and building, is 100 per cent superior to ours. Now, if that is a fact, would you attempt in any way to say or to have it appear that our Navy was superior, or at least equal, to the German Navy?

Secretary DANIELS. Well, I think these figures show that in the recent construction and building Germany is ahead of us.

Mr. BRITTEN. And in first-line ships, dreadnaughts, and battle cruisers, it appears from this 1913 Yearbook that they are more than 100 per cent ahead of us in tonnage, and the figures that I have just given agree precisely with the figures given by the chairman a while ago, and we have not compared our notes in any way.

Secretary DANIELS. I have no doubt that they are correct; I have not added them up.

Mr. BRITTEN. Along the line of the questioning of yesterday and the day before and whenever you were here, it was attempted to be shown that our smallest dreadnaught was superior to the German smallest dreadnaught, and that our largest dreadnaught—as these figures will show, of course—was superior to the German largest dreadnaught. Now, in your opinion, does that indicate the relative strength of the Navy in any way?

Secretary DANIELS. As I said yesterday, the relative strength of a navy can not be taken from any one or two or three ships. It must be taken from all the ships.

Mr. BRITTEN. And these questions of yesterday and day before were along the line of one ship, either the smallest ship in comparison with the smallest ship of the German Navy or the largest ship in comparison with the largest ship of the German Navy, and did not take in the aggregate number or tonnage as against ours, did they?

Secretary DANIELS. You went into a very wide range yesterday.

Mr. WITHERSPOON. I object to the gentleman misstating the facts. The truth about that is that the very first thing we went into—the Secretary and myself—was the number of battleships, and the next thing was the tonnage. Now, the gentleman is putting into the record a statement that does not consider that—

Mr. BRITTEN (interposing). I did not mention any statement.

Mr. WITHERSPOON. The statement is not true.

Mr. BRITTEN. Then, Mr. Secretary, along the line of the question of the cost of labor, it is pretty hard, is it not, to state just exactly what is labor or the cost of labor and what is not the cost of labor, as applied to what goes into a battleship?

Secretary DANIELS. Of course, everything you put in a ship enters into it.

Mr. BRITTEN. There are the guns, armor, and equipment; in fact, everything that goes into the building of a battleship has from 30 per cent to 75 per cent of labor in it, has it not?

Secretary DANIELS. Yes.

Mr. BRITTEN. And all of that labor is performed in Germany as applied to German battleships?

Secretary DANIELS. Yes.

Mr. BRITTEN. So that it is not fair to say that a certain amount of labor has been expended here on our battleships that might be deducted from the general cost of the German Navy and that their total expenditure would still be less than ours, because everything that goes into a battleship has from 30 per cent to 75 per cent of labor attached to it, and their labor is cheaper than ours all the way down the line?

Secretary DANIELS. Yes; as I am informed.

Mr. BRITTEN. Now, a suggestion was made, and the chairman also indicated in his remarks awhile ago the idea, to take the *Michigan* and the *South Carolina* from the battleship schedule and put them in the dreadnaught type. Now, take the Yearbook, at pages 832 and 833, and answer if it would not be just as reasonable to bring into the dreadnaught type the 10 German battleships of the latest and heaviest type, which have a displacement of practically 13,000 tons? Would it not be just as reasonable for our advocates of a cheap Navy to bring down those 10 battleships and place them in the dreadnaught class as it would be to bring down the *Michigan* and the *South Carolina* and put them in our dreadnaught class?

Secretary DANIELS. I will answer that in my hearing. I would not like to answer it without looking into it more carefully.

Mr. BRITTEN. I think that is all, Mr. Secretary.

Secretary DANIELS. Mr. Chairman, replying to the last question in regard to what is a dreadnaught, probably I ought to say that the British ship which gave the name to that class carries ten 12-inch guns with 18,000 tons displacement and a speed of over 21 knots. A ship which does not come up to this standard can not properly be called a dreadnaught. The rule has been that they must come up to 20 knots to be a dreadnaught.

Mr. TALBOTT. Mr. Secretary, I want to ask you a question. The gentleman from Mississippi claimed that we always took the lead in everything. Do you know whether or not England did not build the first dreadnaught?

Secretary DANIELS. Yes; she did.

Mr. HOBSON. Mr. Secretary, have you before you the tonnage of the battleships and dreadnaughts that Japan will have when the present program is complete?

Secretary DANIELS. I have not, Captain, but I will get that.

The tonnage of the Japanese battleships and dreadnaughts less than 20 years old from date of launching is as follows:

	Tons.
Battleships	191, 3/4
Dreadnaughts, completed	41, 6
Dreadnaughts, building	120, 0
Total	352, 1

From reports an eventual strength of eight dreadnaughts is contemplated. This leaves two additional ships to be authorized. The estimates submitted this year contain the request for the authorization of one of these ships.

Mr. HOBSON. Will you be kind enough to put in the hearing the tonnage of dreadnaughts proper, dreadnaughts and battle cruisers, of the first five nations—England, Germany, Japan, the United States, and France—showing the total tonnage when the programs which have been authorized are complete—built, building, and authorized—and also the total tonnage by 1920, considering the present rate of building?

Secretary DANIELS. Yes.

The number and tonnage of capital ships of the five principal naval powers—built, building, and authorized—is as follows:

Table of number and tonnage of dreadnaughts built, building, and authorized.

JAN. 1, 1914.

	Dreadnaughts.				Battle cruisers.				Total.	
	Num- ber.	Built.	Num- ber.	Building and au- thorized.	Num- ber.	Built.	Num- ber.	Building and au- thorized.	Num- ber.	Tons.
		<i>Tons.</i>		<i>Tons.</i>		<i>Tons.</i>		<i>Tons.</i>		
England ¹	18	373,350	14	367,500	9	187,800	1	28,500	42	957,150
Germany ²	13	285,670	6	162,300	4	88,974	3	84,000	26	620,944
Japan ³	2	41,600	4	120,000	1	27,500	3	82,500		
United States ⁴	7	162,650	5	144,800					4	1,000
France ⁵										260,284

JAN. 1, 1918.

England.....	40	964,850	8	224,000	10	213,300			58	1,403,150
Germany.....	20	475,970	5	140,000	8	200,975		84,000	36	900,944

¹ The English program is that stated by the First Lord of the Admiralty and a reply to the German law.

² Program according to the fleet law of March, 1912.

³ From reports, an eventual strength of 8 dreadnaughts and 4 battle cruisers is contemplated.

⁴ Only ships already authorized.

⁵ According to existing program.

In carrying the program forward to 1920 no nation has a definite building program except Germany. Her program calls for 25 dreadnaughts, 11 dreadnaught cruisers, and 16 predreadnaughts by 1920, a total of 52 capital ships.

Supposing the United States to continue to build only two battleships a year until then, our force would be 18 dreadnaughts and 18 predreadnaughts, or a total of 36 capital ships in 1920.

Mr. HOBSON. And what I would like to have also is the comparison with the Japanese program, which has just appropriated for six battleships, where a two-battleship program and a one-battleship program would put America by 1920? I think that would give the really vital information we are seeking.

Secretary DANIELS. I will do that.

It is of course impossible to tell what Japan will do between now and 1920, but the following table is from the best information obtainable:

Year 1920.	United States under program of—		Japan.
	1 battle-ship.	2 battle-ships.	
Dreadnaughts.....	11	18	8
Dreadnaught cruisers.....			4
Predreadnaughts.....	18	18	8
Total.....	29	36	20

Mr. BRITTEN. Now, returning to my last question regarding your opinion of the reasonableness of including the 10 heavier battleships in the dreadnaught class. If you find that it would be just as reasonable to include those 10 in the dreadnaught class as it would be to include the *Michigan* and the *South Carolina* in our dreadnaught class, will you please then give us the relative comparison in tonnage between the then constituted dreadnaughts in our Navy as well as in the German Navy?

Secretary DANIELS. I will do that.

	Germany.			United States.		
	Number.	Tons.	Guns.	Number.	Tons.	Guns.
Dreadnaughts:						
Built.....	13	285,670	146	7	162,650	74
Building.....	6	162,300	56	5	144,800	54
Dreadnaught cruisers:						
Built.....	4	88,974	38			
Building.....	3	84,000	36			
Total.....	26	620,944	276	12	307,450	128

Mr. STEPHENS. Mr. Secretary, within your knowledge, is there any foreign nation that considers the rank of the United States higher than third in the navies of the world?

Secretary DANIELS. No; the same figures as we have here are published by the other great nations.

The following is the relative standing of the principal navies as arranged by the various authorities:

	First.	Second.	Third.	Fourth.	Fifth.
British Naval Annual.....	British	German	American...	French	Japanese.
Jane (British)	British	German	American...	Japanese	French.
Taschenbuch (German)	British	German	American...	French	Japanese.
French Yearbook	British	German	American...	French	Japanese.
Austria-Hungary Report, 1913.....	British	German	American...	French	Japanese.

The CHAIRMAN. Now, gentlemen, we have been very liberal in considering this matter. With the adjournment to-day I am going to ask that the committee consider the program as concluded. The Secretary will come back to-morrow. In the meantime, Mr. Secretary, you can look over the matters and see if there is any other

matter that you want to take up with the committee. We will adjourn to meet at 10.30 to-morrow morning.
(Thereupon the committee adjourned.)

COMMITTEE ON NAVAL AFFAIRS,
Thursday, February 5, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

**STATEMENT OF HON. JOSEPHUS DANIELS, SECRETARY OF
THE NAVY—Continued.**

The CHAIRMAN. Gentlemen of the committee, we have with us again this morning the Secretary of the Navy.

Mr. Secretary, such further suggestions as you wish to submit to the committee, we will be glad to hear.

Secretary DANIELS. Mr. Chairman, the other day Judge Williams asked the question whether it would not be better if we had appropriations in lump sum and not specifically appropriated, if it would not work better. I have a suggestion to make about that, but not for that, of course. Nearly every year we submit estimates for deficiencies. For instance, we submit estimates for provisions, Marine Corps, Yards and Docks, and other things, making this year a deficit in excess of \$534,000. In order to cut down to a minimum the estimate for deficiencies and to promote the best economical use of appropriations, I would suggest that the following provision be inserted in the naval appropriation act:

In cases of emergency arising subsequent to and unforeseen at the time of submitting the annual estimates to Congress, ten per centum of the annual appropriations for the naval establishment, exclusive of public works and increase of the Navy, shall be available interchangeably for expenditure on objects named in said appropriations; but not more than ten per centum shall be added to any one appropriation: *Provided*, That the amounts reserved for wages under any of the appropriations shall not be decreased.

If we had \$150,000 in one fund that we could save, we could use it for the other provided it did not exceed 10 per cent. That would fully meet the idea of Judge Williams and would enable us to avoid having a deficit in the appropriation.

Mr. BRITTEN. While that is being inserted in the hearings I would like to ask the chairman if anything in the shape of a building program has up to this time been inserted in the hearings showing the construction contemplated as well as the present construction of the various foreign powers?

The CHAIRMAN. Yes.

Mr. BRITTEN. I would also like to know from the Secretary if he can have inserted in the hearings a statement showing the relative position of the various foreign powers, and showing the status of our Navy.

The CHAIRMAN. That is all in the hearings.

Mr. BRITTEN. And what the condition will be in the year 1920?

Secretary DANIELS. Mr. Hobson asked for that yesterday.

Mr. ROBERTS. I was not present yesterday, and I would like to inquire if there has been placed in the hearings an estimate by the foreign governments of the relative strength of the navies of the world?

Secretary DANIELS. That is to be placed in the hearings at the request of Mr. Hobson.

Mr. ROBERTS. What I am arriving at is this: I would like to know England's official estimate of the naval strength of the maritime nations; I would like to know Germany's official estimate; I would like to know France's official estimate; and so on, taking the estimate that each of the foreign powers places on all of the navies, their own included. If there is no variation, if two or three foreign nations all agree as to the relative strength of the others, of course one statement of that would be sufficient, showing that the other nations agree.

Mr. Chairman, may I ask the Secretary a question or two now with regard to the recommendation of the Paymaster General for the providing of rations for our officers?

Secretary DANIELS. I did not recommend it.

Mr. ROBERTS. I understand; but you knew that the Paymaster General had made a recommendation?

Secretary DANIELS. Yes.

Mr. ROBERTS. I would like to have you give the committee your views as to rations for the officers.

Secretary DANIELS. I would not advise that it be done. It would cost a great deal of money, and that is an expenditure which it is not necessary to add to the total budget.

Mr. ROBERTS. You realize, of course, Mr. Secretary, the great expense to our officers which comes from entertaining when in company with foreign vessels?

Secretary DANIELS. Yes; but generally when there is any entertainment that is properly chargeable to the country there is a certain appropriation. For instance, when our ships go to Europe there is always an allowance made, of course, not an adequate allowance to cover their entertainment, but to cover the official entertainment. To meet all cost of entertaining would increase the budget so considerably that I would not recommend it.

Mr. ROBERTS. Have you in mind just what the Paymaster General did recommend, the specific recommendation of seven rations per day for the commander in chief, which would amount to \$2.10 a day, six rations for a captain, five for a commander, four for a lieutenant commander, lieutenants, etc., the rations being paid at 30 cents?

Secretary DANIELS. The officers have formerly paid their own bills and I do not think that we should make any change now. I am going to recommend an appropriation when we have the celebration of the opening of the Panama Canal for entertainment of the officers and men of the ships that come over, and in special emergencies now we do draw from the contingency fund for that purpose.

Mr. ROBERTS. You draw on your contingent fund?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. The law does not allow the Secretary of the Navy and the members of the Naval Affairs Committee any money to pay for their banquets, when they have them?

Secretary DANIELS. No. When vessels from abroad come here, the officers should not be required to bear the burden, and we should have a fund; but I do not think that it should be very large or that it ought to be very frequent. It should be adequate to the occasion.

At Jamestown the appropriation was for the entertainment of foreign vessels, and of course at Panama we should have the same thing, only on a larger scale. The contingent fund, as far as I know, has been equal to what ought to be done ordinarily. Mr. Chairman, I will put in the hearings the argument in favor of the 10 per cent provision?

The CHAIRMAN: Please insert it, Mr. Secretary.

(The argument referred to by Secretary Daniels follows:)

Under the various annual appropriations there are always sufficiently large amounts of unexpended balances to more than offset the amount of any deficiencies that may be incurred in other appropriations. With this provision on the statute books it would be possible to transfer from one appropriation where the money is not required to the appropriation which is deficient a sufficient amount to offset the deficiency and obviate the necessity of going to Congress for additional money when the unexpended balance under the first appropriation would be carried to the surplus fund. The present practice swells the apparent total of appropriations for the Naval Establishment without actually increasing the amount of money drawn from the Treasury. Such a provision would also enable the department to take care of serious casualties which might occur. For instance, if the hull of one or more of the vessels was seriously damaged, necessitating extensive repairs at a time when no funds were available under the appropriation for repairs to hulls, it would be possible to take the money from another appropriation where the need for work was less pressing and make immediate repairs to the hull of the damaged vessel.

Mr. ROBERTS. May I ask further if you yesterday put in the hearings any of the information that I requested in regard to submarines G-1, G-2, and G-3?

Secretary DANIELS. No. I am getting that up and will put it in later.

Besides the information already given in these hearings with regard to G-1, G-2, and G-3, I insert here some remarks on recent operations of G-1, from the commanding officer's report of February 12, 1914, namely:

September 28, 1913, to January 31, 1914, was occupied in making surface and submerged runs, carrying out experiments with the deck torpedo tubes and in assisting the torpedo station in experiments with mines and mine-firing gear. Both after-crank shafts of this vessel were broken while charging batteries, after which this vessel received charges from the power plant at the torpedo station and confined operations to submerged work and experiments with the deck torpedo tubes. In January only a few submerged runs were made, as it was not possible to obtain charges for the batteries, owing to certain tests that were being made on the boilers and Diesel engines of the torpedo station power plant. Twenty-three submerged runs have been made since arrival at Newport.

Following is a statement of the condition of the machinery of this vessel: All electrical machinery is in very good condition and has performed satisfactorily, except the radio outfit, which was damaged by fire a few days ago. The two forward main engines are in good condition. The two aftermain engines have broken crank shafts. These engines have been the source of nearly all the trouble and delays on this vessel. An inspection of the broken crank shafts goes a long way in explaining the cause of a great many of the hot bearings that occurred, as both shafts had developed a considerable number of cracks since last installed. The port aftermain engine is ready for assembling as soon as the new crank shaft is received. The starboard aftermain engine will require repairs to the bedplate before the shaft can be installed. It is thought that this work can be done by the crew. One air compressor has a leak, which is caused by a faulty casting at the time the compressor was installed. The other air compressor has operated satisfactorily.

Steering gear, hydroplane gear, bow-rudder gear, anchor gear, marker buoy, diving compartment are all satisfactory, and very little trouble has been experienced from them. The hull torpedo tubes outboard caps are leaking, due to the life having gone out of the rubber gaskets with which they are fitted; these will have to be replaced when the vessel docks. These gaskets were installed by the navy yard, New York, N. Y., in July, 1913. The deck torpedo tubes have been given considerable attention, but so far have not given satisfactory results.

Mr. Chairman, Mr. Roberts asked a question about fuel oil tanks, and I have the full information here.

The CHAIRMAN. Just insert it, Mr Secretary.

(The statement referred to by Secretary Daniels follows:)

FUEL OIL TANKS.

The standard tank is taken as that containing 7,200 tons, equal to 50,000 barrels, or 2,100,000 gallons. Its dimensions are as follows: Diameter, 106 feet; height, 32 feet. These should be spaced not less than 200 feet between centers.

A rectangular oil yard containing 20 tanks capable of holding 144,000 tons of fuel oil would require 18½ acres. A slight additional space would be needed at the head of the wharf for the pump house, and likewise there would be required space for quarters for the operators, watchmen, etc.

Secretary DANIELS. The other day Mr. Hensley submitted some questions relative to the system of shop management at the Washington Navy Yard and other questions about that navy yard, and I have the questions and answers.

The CHAIRMAN. Just insert them in the record.

(The questions and answers referred to by Secretary Daniels follow:)

QUESTIONS SUBMITTED TO THE SECRETARY OF THE NAVY BY THE NAVAL AFFAIRS COMMITTEE AND ANSWERS THERETO.

Question 1. Describe the system of shop management which it is intended to install at the Washington Navy Yard; and the extent to which it has already been installed; taking care to differentiate between what portions of the system have actually been installed and what portions or further features are contemplated. Please select a certain job for an illustration and describe the operations of the system in handling it; such as—what has to be done by the officers, the supervising force, the planning division, the inspectors, the workmen, etc., in conforming to the requirements of the system.

Answer. There has been no material change in the system of shop management proper, nor is there any present intention of introducing any particular new system. It is felt that improvements are possible, but no definite plans have been made for any extensive changes, nor will any such plans be made without a careful and thorough study of all the so-called systems in vogue at various manufacturing plants or without due regard to the acceptability of any changes by the working force. There are, of course, constant and numerous minor improvements in management being worked out as a result of experience, but probably the only one of these of sufficient importance to be noticed or to which reference is intended by the question is a better estimating of work before it is turned over to the shops for manufacture. This can not be properly be described as a system, and it does not affect the work after it has once been turned over to the shops. In general, when work is turned over to the Washington Navy Yard it goes first to the planning and estimating division which makes detailed estimates of time and cost of labor, together with a list of material of each of the separate portions included in the job as a whole. These estimates, when practicable, are based on previous records of the cost of similar or allied jobs. The estimates are made, so far as possible, by selected mechanics with a practical knowledge of the matter. They are then transcribed in a condensed form on a card known as an "operation card," which goes to the master mechanic of the shop receiving the order. This master mechanic looks over the estimates, and if in his opinion the time or cost estimated for the work which he is to do is either excessive or not sufficient he notes his views on the card and returns it for revision to the estimating section. As a rule the corrections made by the master mechanic are accepted, but if there is a difference of opinion a conference is called and the final estimate agreed upon. This planning division has been in operation only for the secondary mount shop, the miscellaneous machine shop and the breech-mechanism shop, although it is not in full operation as yet. All other planning and routing of the work, either as to the workmen or as to the machine tools to be used, is done in the shop itself under the immediate supervision of the quartermen having special charge of that particular

class of work. As to the exact details of the work, the following paragraphs 52, 53, 55, 56, 57, 62, and 63, from a report of the Board of Inspection of Shore Stations, describes the routine followed:

VIII. INDUSTRIAL ORGANIZATION AND MANAGEMENT.

52. *Management of gun factory different from other navy yards.*—Owing to the fact that the work of the gun factory is so greatly in excess of all the other industrial activities of the yard combined, and in accordance with authority which has from time to time been given by the department, the organization and administration of this station have been exempt from the general scheme of navy-yard management prescribed by the department.

53. *General organization of navy yard.*—The present organization of the Washington Navy Yard is substantially the old bureau system which was in use at all navy yards until about five years ago; that is, there is a department of construction and repair, a department of steam engineering, a department of navigation, a medical department, a general storekeeper, a yard paymaster, and the gun factory, which in fact is an ordnance department. The only departures from the old bureau system consist of the establishment of a separate accounting office and the substitution of a public works department for the old department of yards and docks. If the present general scheme of navy-yard management were applied to the Washington Navy Yard, the gun factory and the departments of construction and repair and steam engineering would be merged into a manufacturing department, and the officer now having the title of "superintendent of the gun factory" and also "commandant" would in the former capacity be known as the "engineer officer," and in his latter capacity would have the title of "general manager of the manufacturing department," in addition to his title of "commandant." The preponderating division of the manufacturing department would be the machinery division, as the work of the gun factory is almost wholly machine work. The hull division would do some work in its own shops and would therefore have at least a skeleton organization. The remainder of its work would be performed in the shops of the machinery division and by employees carried on the rolls of the machinery division.

55. *General organization of gun factory.*—Leaving out of consideration the various activities of the yard other than those relating to the work of the gun factory, it is to be noted that the officer in general charge of the station has not only the title of commandant, but also the specific title of superintendent of the Naval Gun Factory. This officer is the immediate technical head of all the shops. His principal assistant is an officer with the title of inspector of ordnance, who is in direct general charge of all the shops, and who has under him a considerable number of assistant inspectors. There is also an officer in charge of the drafting room and another officer in charge of the planning and estimating division.

56. *Planning and estimating division.*—As at practically all our naval stations, the planning and estimating division makes detailed estimates of time and cost of labor, together with list of material of each of the separate operations included in each job as a whole. These estimates, when practicable, are based on previous records of the cost of similar or allied jobs. It is pertinent to state that such planning has only been done for the secondary mount shop and the miscellaneous machine shop, though it is about to be extended also to the breech mechanism shop. The men making these estimates are generally selected mechanics of the gun factory. These estimates are transcribed in condensed form on a card known as an "operation card." The master mechanic of the shop receiving the order, without going into all the details of the ultimate of the cost of the work, gives each of the cards a general scrutiny; and if in his opinion the manner, time, or cost allowed for any job does not commend itself to him, he notes on the card any correction that should be made and returns the cards to the estimating section. If the cards are not returned, it is assumed that he concurs in the estimate. Roughly speaking, about three-fourths of the cards emanating from the estimating section are adopted by the master mechanic without change. As a rule, the corrections made by the master mechanic on the balance of the cards are accepted by the estimating section. Where the master mechanic and the estimating section differ, the estimate is finally decided upon in conference.

57. The extent of the card planning carried on at this navy yard is practically confined to that done in the central office. It amounts simply to deciding which shop shall do the work and furnishing that shop with the estimated time and cost for the separate operations. All other planning and routing, either as to workmen or as to machine tools, is done in the shop itself under the immediate supervision of the quartermaster having special charge of that particular class of work.

62. *Planning in the shops.*—The connection of the planning and estimating division with the shops ends with furnishing to the master mechanic the operation cards, on which are noted not only the operations to be performed, but also the estimated time and cost of each operation. The master mechanic turns these cards over to the quartermen having charge of the particular class of work, and the quartermen simply divides them among the leadingmen. The latter assign each job to such workmen and to such machine tools as they deem expedient, being in such assignment not controlled in any way by the central planning office. No written statement is kept displayed on a board or cards or in any similar manner of what each man is at the moment working on, or of what work he is to undertake on the completion of the job on which he is then engaged.

63. *Duties of subordinate officers at the gun factory.*—There are on duty at the gun factory a number of officers designated as assistant inspectors, whose duties, however, are widely different from that of the inspectors at other navy yards. The word "inspector," as applied to these officers at the gun factory, is in fact to some extent a misnomer. In other navy yards the duties of the officers designated as inspectors are entirely independent of and separate from the duties of those officers assigned by Navy Regulations as assistants of the heads of divisions, since such assistants are responsible for the conduct of the work on board ship and in the shops; and there is at such yards a separate and absolutely independent department of inspection.

In addition to the planning division, a more detailed cost accounting division is in force than in past years, by which the cost of work and the efficiency of the yard as a whole are more easily ascertained, and from which it is possible to procure data as to the cost of past work. This enables the yard to estimate the cost of contemplated work with considerable accuracy when the question comes up of allotting work to the yard rather than to a private manufacturer. This works directly for the benefit of the yard, as without such accurate knowledge when the yard has been asked to bid in competition with private manufacturers, who keep close estimates of their cost of work, it has been obliged to submit estimates with a heavy margin of safety owing to the absence of definite information under the yard plan. Much closer estimates can be given with an exact knowledge of what work of the same kind has cost than if such estimates are not kept.

Question 2. Describe the system previously in use.

Answer. The system previously in use is identical with the system now in use, with the exceptions above noted of the planning division for work in the three shops mentioned and the cost accounting division.

Question 3. State the advantages, financially and otherwise, of the new system as far as it has been extended, as compared with the shop management previously in use. Also what further advantages are expected from any contemplated extension of the system.

Answer. The advantages of the improvements in management in the Washington yard mentioned above, may be briefly summed up as follows: 1. Securing the proper routing and laying out of work by intelligent study of the job in the planning and estimating division and all of the other incidental advantages of a definite and orderly procedure of the work through the shops, as compared to a rule of thumb method, which is always productive of great waste. 2. The securing of accurate data on the actual cost of work on which the yard can submit bids in competition with outside manufacturers.

Question 4. Is it the intention of the Navy Department to allow any premium or bonus system of pay for the employees to be put into operation at some future time when the system has become better developed?

Answer. The form of this question makes it somewhat difficult to answer, as it is a query whether it is intended to do something at some future time when conditions are different. Prophecy is always dangerous, but it is safe to say that no bonus or premium system has yet been developed or brought to the attention of the department which seems adapted to navy yard methods. If at some future time a bonus system acceptable to the employees is devised, the department will give it most serious consideration, as it would any improvement in operating methods which might arise. There is no present intention of adding a premium or bonus system to the shop methods as now in vogue.

Question 5. Is it the intention of the department to allow any stop watch or its equivalent to be used upon workmen at some future time when the system has become better developed?

Answer. It is not the intention of the department to use a stop watch or its equivalent on the workmen.

Question 6. Have any disadvantages of the system been developed?

Answer. Many disadvantages of the general method of management at the navy yard have developed, as would be equally true of any great manufacturing establishment. The ideal method of management for the navy yards or manufacturing plants has yet to be devised. The system of planning and accounting has been criticised in some of its features by the board of inspections for shore stations, and their criticisms will be found in the attached copy of the report to the Senate Naval Committee in paragraphs 58, 59, 60, and 61. Attention is invited to the letter of the Secretary of the Navy transmitting this report, which makes it clear that the department is not prepared to admit the correctness of this criticism, as the whole subject is undergoing a careful investigation and it is probable that improvements will result. There is always a mean between sufficient planning properly to conduct a business and too much routine and red tape which will make the overhead charges out of proportion to the cost of the work itself. The department hopes eventually to arrive at this happy medium.

Question. 7. Is the Secretary of the Navy in favor of giving as much work to the navy yards as they can do, including the construction of battleships in navy yards?

Answer. The Secretary of the Navy is heartily in favor of giving all the work possible to the navy yards, including the construction of battleships, and every effort is being made to keep the yard forces employed as fully as possible.

Question 8. Has the Secretary included in his estimates sufficient money to continue the present wage scale at the Washington Navy Yard?

Answer. No additional money was asked for in the appropriations this year for the purpose of continuing the present wage scale at the Washington Navy Yard.

Question 9. Is the Secretary in favor of continuing that wage scale in accordance with the arrangement entered into, and for which an appropriation of \$240,000 in the last naval appropriation bill last year?

Answer. Wage scales are beyond the jurisdiction of the Secretary to fix, being rigidly defined by law, and they can only be changed by legislation. The wage scale of last year was fixed by Congress and the Secretary, of course, accedes to any decision on the part of Congress as to what is a proper wage amount.

Question 10. Will the Secretary of the Navy allow the present wage scale to stand as it is if the Congress furnishes the necessary funds in this appropriation bill?

Answer. As in answer to the preceding question, the matter of wage scales is not one for the Secretary to determine; this is a question for Congress to decide.

Secretary DANIELS. We spoke the other day about the matter of prisons and the expenses of prisons and discipline. We have been discussing better prison methods with the bureau chiefs and the aids. Our enlistment now for the first time is full, 51,500, and our idea is to begin a weeding-out process, so as to improve the tone and standing of the men in the Navy. We are studying methods of punishment. It seems they are extreme, not only extreme, but very expensive also. We are spending \$1,200,000 on naval prisons and require a thousand men to guard them. I do not think the system is a good one. We are studying plans and having a referendum of the captains and the admirals as to the best methods of improvement. If we inaugurate any methods that are very different from the former ones, we may find ourselves losing more of the enlisted men than we can safely lose, and I would like to ask that the present appropriation for prisons and support of prisoners contain a proviso something like this: "*Provided*, That if the expenditures for this purpose can be reduced, 50 per cent of the reduction effected may, if necessary, be employed for the purpose of recruiting." That is to say, if we put into effect minimum punishments and make it easier for men to get out of the Navy who do not want to stay in, and the total number of enlisted men should fall off, we would like to have some money to open additional recruiting stations, so that if we put out a man because he was not desirable we would be certain to get enough men to fill their places. I have talked with Admiral Blue and with the aids, and we feel that we can make many improvements, and if it does not work well at first we will have some money to open new recruiting stations. The method of recruiting is largely a method of

stations, and if you have 50 stations you will get all you want, and if you have 25 stations you may not. I here insert a statement regarding punishments in the Navy:

FEBRUARY 6, 1914.

Since assuming the duties of Secretary of the Navy it has been my constant aim to consider not only the material of the Navy, but even more particularly the personnel and the measures by which the comfort of the enlisted men of the service, their contentment, their training and education, and their consequent betterment both as naval men and as citizens of the United States could be effected.

Among other matters in this connection the department has taken under consideration the general subject of punishments in the Navy.

All punishments in the Navy are inflicted by authority conferred by section 1624, Revised Statutes, Articles for the Government of the Navy, and subsequent amendatory acts of Congress. These statutes authorize general courts-martial for the trial of all except minor offenses, and the long-standing custom of the service has been for these courts to adjudge imprisonments for varying terms, with corresponding forfeiture of pay and dishonorable discharge as the punishment for offenses tried by them.

Generally speaking, offenses in the service may be divided into—

(1) Criminal offenses.

(2) Military offenses.

The former (criminal offenses) are those which, if occurring in civil life, would be considered as crimes and punished by a term of confinement in a State penitentiary. Such offenses are also punished in the Navy by confinement in State penitentiaries. Among offenses of this character may be mentioned manslaughter, rape, assault with deadly weapon, theft, burglary, etc.

The latter (military offenses) are offenses of a purely military character, those which become offenses only by virtue of the violation of some article of military law, such, for example, as conduct to the prejudice of good order and discipline, disrespect, neglect of duty, absence without leave, desertion, etc. This class constitutes about 95 per cent of our naval prisoners at the present time.

In this class, as would be expected, are found prisoners of varying degrees of guilt; some who are very young and whose youth and inexperience undoubtedly merit consideration. In view of this, the purely military offenders are divided into two classes. The more hardened offenders, those who, being older, have less excuse for their offenses, and those whose records and repeated offenses show that they are undesirable for retention in the service are confined in naval prisons. On the other hand, those who are more youthful, those whose offenses are not of a very serious nature and whose records indicate that they may yet become desirable men for the service, are sent to one of the two disciplinary barracks to serve out their term of confinement. At these barracks the offender wears his regular naval uniform, receives systematic academic instruction, and is put through a course of regular service drills, and at the termination of his confinement, if conduct while in detention has warranted such action, he is unconditionally restored to duty in the service.

Among military prisoners it is found that 80 per cent of the offenses are primarily due to desertion, or unauthorized absence in one form or another. Furthermore, the frequency of unauthorized absence for short periods (which is punished by other than general courts-martial) has been found injurious not only to the discipline but also to the actual efficiency of the service.

Though these military offenders are undoubtedly guilty of serious infractions of discipline and of the laws for the Government of the Navy, it is nevertheless unquestionable that their imprisonment many times works a hardship upon their families. Especially is this the case when a man is arrested for desertion. Such men frequently subsequent to their desertion marry, and when arrested leave unprovided for a destitute wife and one or more young children.

The actual cost of the maintenance of prisons and prisoners is an item of importance; about 1,000 officers and men of the Navy and Marine Corps are employed in connection with naval prisons and prison ships in guarding, drilling, and instructing the prisoners, and the annual cost of prisons and prisoners is approximately \$1,200,000.

In view of all of the above the department has under consideration a change in the form of punishment for the one offense of unauthorized absence in time of peace whereby summary discharge for deliberate unauthorized absence from station and duty in excess of 24 or 48 hours would be punished by summary discharge from the service, as would be done in any commercial firm in civil life, instead of by imprisonment.

In view of the radical nature of this change and its far-reaching effect, I considered it advisable, before taking action, to refer this question to a large number of prominent

officers of the service. This was recently done, but all replies not having been received, no action whatever has been taken nor has any except tentative consideration been devoted to the question since this subject was thus referred. My earnest desire is to take such action as will secure in the Navy willing, cheerful and happy service. The enlistment now being full for the first time in many years, the time is ripe for the consideration of plans to lessen punishments upon boys and young men who do not deliberately violate the regulations.

Mr. WITHERSPOON. How many stations have we now?

Secretary DANIELS. I do not know, Judge; we have perhaps 25 stations.

Mr. ROBERTS. Mr. Secretary, what is the purpose of making it easier for the men to get out of the service?

Secretary DANIELS. Here is the idea which we are thinking about: The great trouble in the Navy is that men who come in overstay their leave and then they are tried for desertion and sent to prison. The minimum time has usually been two years.

Mr. ROBERTS. That has been reduced?

Secretary DANIELS. We have made reductions so that if it is an enlisted man under 21 years of age we never send him to prison, we send him to the disciplinary barracks for 18 months, and he may cut it down to 12 months by good behavior.

Mr. STEPHENS. Does not a term in a naval prison deprive a man of his citizenship?

Secretary DANIELS. No.

Mr. STEPHENS. And his right to vote?

Secretary DANIELS. No.

Mr. ROBERTS. Does it not depend on what he is sent to prison for?

Mr. BRITTEN. Does the young man under 21 years of age who is sent to the disciplinary barracks go back to the Navy at the expiration of the 12 months?

Secretary DANIELS. If his conduct is good he goes back.

Mr. STEPHENS. I have correspondence on my desk which I received yesterday concerning a young man who says that he stayed 14 days overtime and he knew that he might be punished for not coming back, but he said that he did not mean anything, that he was always in his uniform and was on his way to his ship when arrested by a policeman, and he was finally sentenced to two years and he served the term and lost his citizenship.

Secretary DANIELS. He was dishonorably discharged. If a young man goes to the disciplinary barracks he is not dishonorably discharged.

Mr. STEPHENS. Under the plan which was then in effect he was dishonorably discharged, served two years, and lost his citizenship?

Secretary DANIELS. That was one of the harsh things that has been changed.

Mr. ROBERTS. I think there is a mistake unless this case happened several years ago.

Mr. STEPHENS. It did.

Mr. ROBERTS. That was changed; the law was changed.

The CHAIRMAN. We repealed that law two or three years ago.

Secretary DANIELS. A young man does not lose his citizenship except in time of war.

Mr. ROBERTS. Not now.

The CHAIRMAN. He did until a few years ago.

Secretary DANIELS. We are taking the referendum of the naval officers on this plan, and so far we have heard from about 75 per cent, who approve the tentative suggestions. It sounds radical at first, but we hope to put it into operation if, after more consideration, it seems wise to do so. The chief trouble in the Navy is that the men who go ashore overstay their leave. Our idea is that if a man goes ashore and overstays his leave 48 hours willfully he should be dismissed from the Navy with a dishonorable discharge. He is then out; we do not want him; we do not try or punish him; the captain hears him, and if it is willful he is discharged.

Mr. BROWNING. Could not that be instead of a dishonorable discharge a discharge without honor, so that he would not have that stigma?

Secretary DANIELS. A bad-conduct mark?

Mr. BROWNING. Something of that kind, a discharge without honor instead of a dishonorable discharge.

Mr. TALBOTT. Make him ineligible for reinstatement?

Mr. BROWNING. Yes.

The CHAIRMAN. Is not 48 hours a short limit?

Secretary DANIELS. It may be too short.

Mr. STEPHENS. I am not quite sure that a boy can surrender himself, because if he happens to run across a policeman, the policeman gets the \$50 reward?

Secretary DANIELS. Yes; but if he is a man of good character at home and can show that he was on his way back, that is taken into consideration.

The CHAIRMAN. We inserted a provision in the bill a couple of years ago which allows minors to be released without any dishonorable discharge, but they have to pay the cost of the first enlistment.

Mr. HOBSON. After 12 months?

The CHAIRMAN. No; at any time. There is a provision on page 18 of the bill relative to recruits who have sworn falsely as to their age and who are under 18 years of age at the time of enlistment.

Secretary DANIELS. I think that should be changed to 21 years of age.

Mr. ROBERTS. Mr. Secretary, have you not full power under the law to handle such cases; you can dismiss any one from the Navy that you see fit?

Secretary DANIELS. We have full power. The reason I brought it up was that I wanted to ask for this proviso relative to the interchange of the appropriations.

The CHAIRMAN. Mr. Secretary, I am going to ask that you proceed, without interruption, to tell us what your plans are.

Mr. HOBSON. Mr. Secretary, is it not your practice to require them to be in one year before you will consider the case?

Secretary DANIELS. That is the general rule. If there are special reasons we sometimes let them out earlier. We have not really formulated any changes; the matter is under discussion and consideration. Now that the enlistment is full for the first time in many years and we are sending so many young men to prison, thereby losing largely from the active service, and many of them are really not criminals at all, but young fellows who get homesick, who have gone into the Navy and want to get out, or who have done something wrong, instead of sending them to prison it is our idea to say to them, "We

do not want you in the Navy; we can get enough men who are willing to serve and anxious to serve, and unless you live up to the rules, if you go away and stay willfully more than a fixed time"—the suggestion was 48 hours—"you will be discharged and we will put you out of the Navy with a bad-conduct mark." That would insure the men who are given liberty and who want to stay in the Navy coming back. At the same time it would open a door for all who wished to go out to overstay their leave. I see an element of danger in that, a very great element of danger.

Mr. HOBSON. A man's mind varies according to moods, and a man of mercurial temperament who really did not wish to go out permanently might momentarily wish to go out and take advantage of that against his own self?

Secretary DANIELS. I recognize that we would lose a good many at first, but I recognize that we would save the men who now think they can safely go away and stay 48 hours and more without leave, who demoralize the ships. If you could stop the men overstaying their leave and have every man back to the ship, you can cut down the men on the ships 10 per cent, when every man is present and is alert to his job. You then have every man in the Navy who wants to be in the Navy. You have a list of men waiting to come in, and whenever you can get established in this country a system so that we have not a single enlisted man in the Navy unless he wants to be there, you will reduce the great cost of our recruiting stations and you will have men wishing to come in and men of a constantly increasing better type.

Mr. ROBERTS. How about the men who never get shore leave and who can not overstay?

Secretary DANIELS. That does not happen.

Mr. ROBERTS. There are a lot of men held on the ships on account of minor punishments?

Secretary DANIELS. I think we have very few of them.

Mr. HOBSON. Would you consider it advisable to arrange some way of getting rid of them when they want to go, without the delinquency of overstaying their leave?

The CHAIRMAN. He is speaking of substituting that arrangement for the existing arrangement.

Secretary DANIELS. It must be willful, and, of course, you have to accompany that with many provisions. It has been customary when a ship was in port to give leave to certain men at night, and there has been no way for those men to get back to the ship after 10 o'clock, and so I have issued an order that a boat shall go back at 12 o'clock and 2 o'clock, so that there will be no excuse for the men absenting themselves.

Mr. HENSLEY. Mr. Secretary, has your attention ever been called to the fact that many young men and boys are induced to enlist in the Navy by representations which, when they get into the Navy, they find are not entirely lived up to? I have heard quite a lot of complaint along that line with reference to the recruiting officers going out and seemingly, in their effort to recruit as rapidly as possible, they lay down things to the boys and induce them to enter when otherwise they would not enter.

Mr. TALBOTT. Picture conditions that do not exist.

Mr. HENSLEY. That is it. There is another class of young fellows who when they find everything is not as rosy and as lovely as they had hoped to find it will not remain.

Secretary DANIELS. In the past the enlistment has been from 5,000 to 10,000 short and there has been need of men. Whenever you need more men you will naturally persuade them to come in more than when you do not need them. I hope it will be so that we will not have to persuade men to enlist. I regard the educational policy, which we are putting into operation, as an inducement to young men who wish education and travel to come into the Navy. I do not think that any man should come into the Navy and not find everything that he is promised.

If we advertise that if a man comes into the Navy he can get an education, he is going to get it; if we advertise that the man can learn a trade, we are going to see that he can learn it. It has been true always that a very bright young man, very ambitious, who came into the Navy, could always learn to be a machinist or electrician but he had to have in himself the stimulus and ambition and earnestness. The average man was not given it unless he pressed for it. Under the present plan every man who goes into the Navy must go to school for two years, he must go to school every day, and then he must elect which trade he will take up, whether he will go into gunnery or electricity or any of the 20-odd trades on a ship.

Of course, when he elects which one to take that does not necessarily mean that his selection settles it, because the authorities on the ship examine him and if he wants to take electricity and has no talent, of course he is not allowed to do so, because it would destroy the efficiency; but he must learn some trade. My theory about it is that in a little while, as soon as you have turned out the product under the new system, you will find that hundreds of young fellows, whose parents are not able to send them to college or to technical schools, will go into the Navy for instruction. Then, when their enlistment expires, they will go back home with a fair education and a trade, so that they will be useful citizens and can go into the civil occupations qualified to make a good living, if they decide not to reenlist.

Mr. ROBERTS. Has not that been one of the difficulties in the past—to get men to reenlist a second time, because we have given them so many advantages in their first enlistment, taught them a trade which will bring them greater remuneration outside than in at the end of their enlistment?

Secretary DANIELS. I would not call that a trouble. I would call it a blessing.

Mr. ROBERTS. It is a blessing in one sense, but it has been a trouble in keeping the enlistment to its full strength.

Secretary DANIELS. It is my recollection that 57 per cent of the men reenlist.

Mr. ROBERTS. How long a period, on the average?

Secretary DANIELS. Three years. They reenlist, and our theory is that this educational policy, when it has fully developed, will offer promotions for these young men. They will see a better chance to get to the top, which will keep them in. We have provided an examination for the men who want to become petty officers.

Mr. TALBOTT. Is navigation one of the subjects?

Secretary DANIELS. Yes; they all have to take navigation and everything that makes a good all-around man. Admiral Vreeland was a seaman apprentice. I would like to recommend that a certain

number of young men who enlist in the Navy, upon examination, be appointed to Annapolis every year.

The CHAIRMAN. I was discussing that question with Admiral Blue a few days ago, and I asked him if he had discussed it with you.

Secretary DANIELS. We have discussed it.

The CHAIRMAN. Will you please place in the hearings a statement of the reasons for that and the number that you would suggest at first?

Secretary DANIELS. Yes.

Mr. WITHERSPOON. Mr. Secretary, do you know how many more midshipmen we could accommodate at Annapolis?

Secretary DANIELS. The law you passed last Congress increased the number.

The CHAIRMAN. We did not increase the number, but just continued the existing law for six years. There was an increase the year before that for the reason that the membership in Congress increased from 391 to 435.

Mr. WITHERSPOON. The point I wanted to get at is different altogether from that. There is a limit to the number of men you can educate at Annapolis, and I want to know if you have looked into that, and how many additional we could accommodate there?

Secretary DANIELS. I think, probably, 200 more; but I will put the exact number in the hearings.

The maximum capacity of the Naval Academy is 865 with comfort, or 945 with crowding.

The number of midshipmen now at the Naval Academy is 820.

Mr. ROBERTS. Is it your idea that these apprentices should be appointed by the Secretary of the Navy?

Secretary DANIELS. My idea is that we should appoint at least 25 a year, if they could stand the examinations. We would have a board to examine them, and the 25 who stood the best examinations, physically and mentally, should be appointed; not that they should be appointed by the Secretary of the Navy.

Mr. HOBSON. You do not think that 25 would be all you would recommend?

Secretary DANIELS. My idea is that you would not probably find more than 25 the first year who would stand the examinations. My idea is, say, 25 the first year and 50 the second year, and leave the ultimate number for future consideration.

Mr. ROBERTS. Would they have to stand the same examinations that the senatorial, congressional and presidential appointees have to stand?

Secretary DANIELS. I should say so.

Mr. BRITTEN. You probably would not get 25.

Mr. ROBERTS. The average high-school graduate can not pass the examination?

Secretary DANIELS. Yes; he can.

Mr. ROBERTS. In certain sections of the country the high school course does not include world's history, so that a high-school graduate in that part of the country is not at all familiar with world's history.

The CHAIRMAN. They have eliminated that from the examinations.

Mr. HOBSON. My conception of it is that this would become popular and effective if you have the entrance into the Academy and the commissioned corps of the Navy outside of any political consideration?

Secretary DANIELS. That is what I want it to be.

Mr. TALBOTT. Why not have the law say that you can appoint not to exceed a certain number?

Secretary DANIELS. That would be all right.

Mr. HENSLEY. Mr. Secretary, do you know how many men have been leaving the service after graduating at Annapolis?

Secretary DANIELS. I have not the figures. I am glad you asked the question, and I will put the number in the hearings. I have accepted but one resignation. I do not think that a man who has been educated at Annapolis and has been trained for this service at a large expense ought to go out and accept employment in private life at a higher salary.

The following table shows the number of resignations which have taken place since 1902 from among Naval Academy graduates. Of this total two have been by request "for the good of the service."

The large number of resignations during the last few years has been attributed in part to the poor prospect of promotion ahead of the younger officers.

The column headed "Midshipmen" refers only to those who have been graduated from the Academy and were making their two years' cruise. This grade was abolished early in 1912 and no longer exists.

	Line, com- missioned.	Midship- men.	Naval con- structors.	Total.
1902.....	9	1	1	11
1903.....	7	0	5	12
1904.....	7	1	0	8
1905.....	7	1	1	9
1906.....	5	3	1	9
1907.....	7	6	0	13
1908.....	3	8	0	11
1909.....	9	3	0	12
1910.....	4	18	0	22
1911.....	19	26	0	45
1912.....	22	2	2	26
1913.....	8	0	2	10
Total.....	107	69	12	188

Mr. ROBERTS. Is not that the same argument in regard to the enlisted personnel, that we do not want men in the service who are not satisfied?

Secretary DANIELS. It does not cost us anything like as much to get an enlisted man.

Mr. ROBERTS. It costs something to educate and outfit him?

Secretary DANIELS. Except the first five months when he is at the training station it does not cost us anything. When you send a man to Annapolis it costs you, I do not know what the figures are, about \$18,000.

The CHAIRMAN. It has been estimated from \$16,000 to twenty-odd thousand dollars.

Secretary DANIELS. Of course, I would not say that you could make a hard-and-fast rule that they should never go out, but they should have to show that there was a compelling reason. As a rule, the man who goes out and wants to come back, ought not to come back.

Mr. Chairman, in the matter of aeronautics, we have not done a great deal in the Navy. A few months ago I appointed a board to

look into the matter and make a comprehensive report, which they have done.

The CHAIRMAN. Do you desire to insert that in the hearings?

Secretary DANIELS. Yes; I should like to insert the report in the record.

The CHAIRMAN. Very well.

There was a recommendation which you made, I believe, in your report about the old ship *Constellation*. I would like to ask what you have to say and to give us any reasons for that recommendation.

REPORT OF A BOARD ON NAVAL AERONAUTICS CONVENED BY NAVY DEPARTMENT
ORDER No. 2309-89, OCTOBER 9, 1913.

A COMPREHENSIVE PLAN FOR AN ADEQUATE AERONAUTIC SERVICE FOR THE UNITED STATES NAVY.

OCTOBER 9, 1913.

To: Capt. Washington I. Chambers, United States Navy, Bureau of Navigation, Navy Department, Washington, D. C. (chief of bureau).

Subject: Senior member of board on naval aeronautic service.

1. The following board is hereby appointed to convene at the Navy Department, Washington, D. C., for the purpose of drawing up a comprehensive plan for the organization of a naval aeronautic service:

Capt. Washington I. Chambers, senior member.

Commander Carlo B. Brittain, member.

Commander Samuel S. Robison, member.

Lieut. Manley H. Simons, member.

Naval Constructor Holden C. Richardson, member.

Lieut. John H. Towers, member and recorder.

First Lieut. Alfred A. Cunningham, M. C., member.

2. The board will be subject to the call of the senior member and will carefully consider, without delay, the subject of providing an adequate aeronautic service for the use of the United States Navy, to include dirigible balloons and aeroplanes, with the necessary stations, mobile equipment and appliances, and also the necessary personnel and schools of instruction, together with an estimate of the requisite appropriations under each bureau.

3. The members and recorder have been directed to report to you for this duty.

4. This is in addition to your present duties.

5. The Bureau of Navigation will furnish such clerical assistance as may be necessary to record the proceedings and prepare the report.

F. D. ROOSEVELT, Acting.

REPORT OF A BOARD ON NAVAL AERONAUTICS.

After considering the subject of providing an adequate aeronautic service for the use of the United States Navy, including dirigible balloons and aeroplanes, the necessary stations, mobile equipment and appliances, the personnel, the schools of instruction, and the requisite appropriations for the fiscal year, the board submits the following comprehensive plan for the organization of a naval aeronautic service, the establishment of which it recommends at the earliest possible date.

THE GUIDING POLICY.

1. The policy in aeronautics which is being manifested by all powers that consider adequate sea power necessary for national protection may be briefly summarized as follows:

Superiority must be maintained in all matters of aerial equipment and must not be confined to aeroplanes alone. Adequate sea power can not be maintained by force of arms unless adequate superiority is maintained over the whole sphere of aerial development.

2. Other nations have started earlier, but England is determined to take the lead. The genius of France and the perseverance of Germany have produced results which at present we can not equal, but which many other powers are striving to reach. All

are striving to attain that perfection in aerial warfare which will be an indisputable element in naval strength and security.

3. The adequacy of our naval aeronautic service, therefore, should be measured by its capacity for service to the fleet and will depend, primarily, upon the characteristics of the fleet and our naval policy. These indicate that our sphere of operations is away from our coast, that our expeditionary forces must be prepared to operate at a distance, and it is safe to assume that our aeronautic service will be adequate if based upon efficient service for and with the fleet when operating at a distance from home bases. Economy and the best interests of the service demand, therefore, that our comprehensive plan be confined to those measures that will best serve the fleet and that our efforts be not wasted upon the maintenance of superfluous establishments.

SUPERFLUOUS ESTABLISHMENTS.

4. Certain foreign powers, separated by a distance less than the radius of airship operations, have planned air services, apparently, upon the same theory of coast defense that led many astray in their shipbuilding policies before Mahan discovered the meaning of "sea power." In a war between two such powers, say A and B, in which A preponderates in air power and B preponderates in sea power, the former, to assume the offensive, must first destroy the preponderating units and damage the resources of B. To prevent this, B prepares to checkmate, not by seeking A's aircraft, his aircraft shelters, and other resources on which they depend, at their known localities, their starting points, but by awaiting the arrival of A's aircraft at coastal stations or scattered "centers," which A would surely avoid during the night.

5. Such a policy we should avoid as involving superfluous expenditure, and we conclude, therefore, that a concentration of efforts is desirable in the matter of aeronautic centers or stations, the main usefulness of which, after all, is limited to instruction and experimentation.

6. If A can damage B's fleet and its resources by the air route, it should be possible for B to damage A in the same way. Sooner or later those principles of the art of war that are everlasting will induce B to watch A with air craft in the struggle for air power, regardless of the relative status with respect to sea power. It is inevitable that the air service of B will become developed for operating offensively and at a distance with expeditionary forces, and this plan will be adopted, copied, or possibly anticipated by all other great powers.

7. This discussion has seemed necessary to show why the board, in its recommendations as to stations, equipment, and schools, has confined its attention principally to one suitable aeronautic center as the best plan to prepare an aeronautic personnel, equipment, and appliances in the most effective manner to serve with the fleet in its offensive operations and for the fleet in protecting it from hostile air craft.

8. However, nothing should be neglected that will be required to insure the production, maintenance, and progressive improvement of all that pertains to the efficient aeronautical equipment of the fleet, and although concentration of effort upon one aeronautic center simplifies our home organization, there are a few other establishments, to be mentioned later, which will be required to maintain the complete efficiency of the whole aeronautic organization.

THE MAIN ELEMENTS.

9. The main elements of an adequate mobile equipment are, (1) aeroplanes, (2) dirigibles, (3) kites, and (4) captive balloons. The details of all the impedimenta required for their effective use with the fleet require such complete technical consideration that the labors of this board would have been unnecessarily prolonged should it have studied them fully, and the completion of the details has been left to those who are to be held responsible for carrying out the plan as a whole.

AEROPLANES.

10. There are two methods of making use of these. (1) From the fleet units, the fighting ships, and scouts. (2) From auxiliaries, either special or existing. The board recommends that measures be adopted to employ both methods.

11. At least one aeroplane, with a spare motor, a few spare parts, and a box of special tools should be available eventually on each fighting unit, to obtain the necessary experience, training, and familiarity with their requirements under service conditions. Furthermore, a scout, battleship, or any groups of ships will need their services on detached duty during which the auxiliaries would not be available, and it is doubtful if the auxiliaries alone could handle the number that will be required eventually.

The board desires to emphasize its opinion that although aeroplanes may not be placed on board all battleships at once, this is a condition which it is desirable to bring about as soon as practicable.

12. A certain number of auxiliaries should carry the stores, supplies, and the bulk of the impedimenta that would unnecessarily encumber the fighting ships; for example, the hangar tents of an expeditionary camp, the bulk of the fuel and oil, as well as a reserve supply of aeroplanes and spare parts.

13. Certain auxiliaries may or may not be rigged for the use of aeroplanes. Such as are would preferably be special ships, which require special study by those who are to be responsible for carrying out the details.

14. The following principles are recommended as guides to the further development and use of aeroplanes in the Naval Service:

A. The instruction of officers in the Navy and Marine Corps should proceed with machines of the same types, constant improvement in the types being always sought.

B. The air pilots of both the Navy and Marine Corps should be available for any class of service (over land or water) that may be required.

C. A standard type of control should be used in order that all Navy and Marine Corps air pilots may be able to fly any machine in service.

D. It is desirable to develop a single type of aeroplane that will meet all of the general requirements of both the Navy and the Marine Corps without impairing the efficiency of either.

AEROPLANE EQUIPMENT FOR THE FLEET.

15. There is needed for fleet service, battleships, scouts, armored cruisers, and auxiliaries, the following:

50 aeroplanes, complete.

50 outfits, spare part sets, etc.

And for advanced base outfit:

6 aeroplanes, complete.

6 outfits, spare part sets, etc.

4 knock-down trucks, that can be readily towed by such transportation as is provided by the Marine Corps, or that can be obtained or improvised on shore.

6 hangar tents.

DIRIGIBLE BALLOONS.

16. The information hereto appended, marked "C," leads to the following conclusions:

(1) Foreign powers contemplate extensive use of dirigibles in fleet operations, and a study of their limitations is to be gained only by experience with them. The establishment of means for their home production can not safely be neglected, for they will doubtless be regarded as contraband of war.

(2) The experience of Germany, with the large rigid type, has been illuminating, and although costly, has given her a valuable prestige, and built up industries of which other nations may well be envious. If she reverses her preference for dirigibles of the rigid type, she has at hand the means of rapidly replacing them with the latest and best of any more suitable type.

(3) To produce a desirable speed of 50 miles per hour or more, to obtain large carrying capacity, and to increase ascensional power, great size is necessary, but although the navies of great powers are ordering nonrigid dirigibles of 23,000 cubic meters or more, all will be cautious about developing plans for transporting such huge aircraft to long distances from a home base, until the development reaches a stage permitting the radius of section to be vastly increased, and until it becomes reasonably safe to use them in all weathers, in order that they may accompany fleets by use of their own powers. Regardless of the present state of foreign orders for the larger class, however, it would be folly for us to order this class until we have a personnel trained to the use of the smaller ones. All foreign powers had to begin with the smaller class, and as we are practically novices in the art, we shall have to do likewise.

(4) There will be no hesitation, however, on the part of any sea power, in providing for the smaller and medium sized dirigibles, to be used with expeditionary forces.

17. The board recommends that appropriations be made to cover the purchase of at least one suitable dirigible at the earliest practicable date, for expeditionary service with the fleet, which may be transferred eventually to the outfit for advanced-base use, and that provision be made also in the appropriations for advanced-base material for the purchase of a dirigible. It is assumed that others will be required after experience with the first.

DIRIGIBLE SHELTERS.

18. The principal difficulties in the maintenance and handling of dirigibles are apparently the providing of suitable sheds or shelters for housing them while inflated, the great cost, and the inconvenience and danger attending the use of hydrogen gas.

19. A fixed shed of the simpler kind is a formidable structure and a portable shed of the fixed type is of very uncertain efficiency. Nevertheless, Wellman managed to erect one in the Arctic regions for his polar expedition, and the Italians have had their experiences with one in Tripoli.

20. An airship in a fixed shed is confined until the wind is favorable for exit. The Siemens-Schuckert firm, in Germany, have accordingly built a revolving shed, and it is notable that this was built to accommodate a nonrigid, which is less difficult to house than a rigid. It is 450 feet long, 83 feet wide, and 83 feet high. Difficulties were experienced with the rails, wheels, and starting mechanism, but perseverance finally brought success. The speed of rotation is 90° in 15 minutes, but this is considered satisfactory.

21. The cost is great, but better shelter and vastly improved facilities for egress and entering are provided by the new sheds for the German Navy at Cuxhaven, which are double as well as revolving, each shed being capable of housing two or the largest dirigibles at once.

22. Many other devices have been proposed, notably a fixed circular or semicircular shed; also a fixed shed with rotating platform and guide rails outside. These are not entirely satisfactory.

23. The question of shelter is of primary importance for consideration in the equipment of expeditionary forces. Some provision better than either fixed or revolving sheds of the land type, which would take too long to erect at an advanced base should be made. Such elaborate shelters might require removal to another location soon after erection. The English Army's transportable mooring mast provides a satisfactory solution for mobilization with an army, and would doubtless serve its purpose with a fleet, the mast being erected at an advanced base, but it would require deflation of the envelope in very bad weather.

A SPECIAL AUXILIARY FOR DIRIGIBLES.

24. This should be studied in connection with the subject of a special auxiliary for aeroplanes. The dimensions of such a ship would naturally depend upon the maximum size of the expeditionary dirigible. These are details which would better be left for determination after our initial experience, but the preliminary studies might well be commenced on the basis of accommodating a 10,000 m³ dirigible of 50 miles per hour.

25. The board recommends that plans of existing auxiliaries be carefully examined with a view to ascertaining which is the most suitable for transporting the outfit, together with all reserve aeroplanes and spare parts, and the board further recommends that all aeroplanes and spare parts be supplied, whether aeroplanes and aviators be supplied to all ships of the fleet at once or not.

BALLOONS.

26. Free and captive balloons equipped for use either way, are useful in the preliminary instruction of dirigible pilots. We may learn later that they would be of service with the fleet, but it would be indiscreet to recommend the purchase of more than one, to be used at our pilot school or aeronautic center. Our experience with it will determine the value of simple balloons for fleet service.

The board recommends that we begin with one using hydrogen of the same quality as dirigibles, and at the same plant. Balloons of the hot-air type, or "fire balloons," as they are called, would be ideal for fleet service, except for the large size required. It would be worth while to do some experimentation with them.

27. Three small captive balloons for meteorological observations will undoubtedly be required at the aeronautical center, and possibly later with the fleet, when we have gained some experience in their use.

KITES.

28. It is recommended that standard plans for building kites be furnished to all flagships.

AERONAUTIC CENTER AND FLYING SCHOOL.

29. The board recommends the Pensacola Navy Yard as an aeronautic center, for the following reasons:

(a) Its equable and salubrious climate, permitting out-of-door work throughout the year. Normal temperature, 67.9° F.; normal excesses, 81.4° F. and 52.3° F. The sea breezes in summer temper the heat of that period.

(b) Its central position on the Gulf Coast, its proximity to the West Indies and the Isthmus, its rail connection to all parts of the country, and a fair amount of steamship facilities.

(c) Its great land-locked bay, its nearness to the Gulf, its ease of access, and the protection by fortifications.

(d) The small rise and fall of tide (about 1 foot).

(e) The character and extent of water front.

(f) The distance from the city, 7 miles, away from objectionable features that exist at other yards.

(g) Ample space, 1,434 acres, as compared with 937 acres at Philadelphia.

(h) Convenience of the towns of Warrington and Woolsey on Government land for the homes of navy yard workmen.

(i) Ample quarters, workshops, storehouses, barracks, sawmill, boat shop, hospital, radiostation, magazine, wharves, and other facilities which already exist.

(k) There is a fine slip, or wet basin, 550 feet long, 125 feet wide, and 9 feet deep, with a caisson at the opening, which would provide ample accommodation for a double floating dirigible shed.

(l) The bay, 19½ miles long, averages 2½ miles in width, and is sufficiently capacious to anchor the whole fleet. Its tributary bays and streams, as well as its nearness to the open sea, render it a fine aerodrome for aviation, and the comparatively unsettled portion of the surrounding country, in addition to the clear space of the bay, render the location very suitable for dirigible practice.

ADDITIONS TO THE PENSACOLA PLANT.

30. Immediate additions to the existing plant should include the following:

Two dirigibles, Vedette class, for instruction purposes.

One double floating dirigible shed, with mooring buoy and facilities for hauling out to the moorings and into the slip.

One capacious and modern fixed hydrogen plant. To avoid the necessary delay of installing the fixed hydrogen plant and to become familiar with a portable plant, which will be needed later, a portable hydrogen plant should be obtained with the Vedettes.

One mooring mast in the center of a suitable clear space on shore.

Improved facilities for the storage of gasoline.

A meteorological observatory and instruments for obtaining a constant record of atmospheric currents at different elevations. (The radiomast could be utilized in part.)

Two small captive balloons for meteorological needs.

One combination captive and free balloon for experimental and instructional purposes.

Proper facilities should be provided for the officers and men to execute the work in aeronautics, and proper facilities should also be provided for athletics and amusement, such as base ball, basket ball, tennis, etc., and for an aeronautic library.

PERSONNEL OF THE NAVY AERONAUTIC CENTER.

31. It is recommended that this be organized as follows:

The commandant, in military command, with two divisions under him.

(1) An aeronautic division, with sufficient aids, other officers, and enlisted personnel of the Navy and Marine Corps to carry on the instruction in aeronautics, both with dirigibles and aeroplanes.

(2) An operative division, consisting of a staff and civil establishment adequate to the operation of the yard, for the purposes of an aeronautic center.

(3) There should be three aids, who will be instructors; the senior aid to be executive officer of the yard and to have charge of the enlisted personnel.

(4) There should also be one gunner, one boatswain, and one carpenter, assistants to the executive officer.

(5) One marine officer, in command of the marine guard, which should be distinct from the Marine Corps personnel of the aeronautic department.

(6) As a general basis, the number of officers and men from each branch (Navy and Marine Corps) detailed for aeronautic duty should be about in proportion to the relative numbers of the two branches of the service.

PRINCIPAL AVIATION CENTER AND FLYING SCHOOL.

32. It is recommended that the principal aviation center and flying school be located also at the Pensacola Navy Yard. It would be advantageous to have it under the single military command specially interested in aeronautic work, and the following advantages are also apparent:

- (1) The favorable climate.
- (2) Facility for comparison and cooperation between dirigibles and aeroplanes.
- (3) Economy combined with efficiency.
- (4) Facility for cooperation with the fleet, it being impossible for the auxiliaries, or even the fleet, to take on outfits in this harbor.

33. It should be maintained in two categories: (1) The sea section, for advanced practice and experimentation; (2) the land section, for preliminary instruction and practice.

THE SEA SECTION OF THE AERONAUTIC CENTER.

34. It is recommended that a reserve ship, preferably one of the *Charleston* class for the present, be stationed ordinarily at this yard, but able to leave temporarily at such times as may be advisable to conduct practice at sea or to join the fleet at any locality at any time, but especially during the two hottest months of summer, when some of the practice may be worth demonstrating at Annapolis, Md., for inspection purposes.

35. This class of ship is preferred as being less actively employed with the fleet than the others and as being specially convenient to test the arrangements required for the installation of aeroplanes on battleships and as being able to conduct the work without loss of military efficiency in any respect.

36. This ship should be regarded, especially during the preliminary stages of developing aeroplanes for fleet service, as a mobile flying school for the qualification of aviators in advanced flying and for the test of devices to be employed in the use of aeroplanes by ships of the fleet. The launching device or "catapult" now being made at the Washington Navy Yard (to embody the improvised plan, which was successfully tested in October and November of 1912) should first be tried on this ship. It is probable that suggestions for modifications will be in order, particularly with respect to reducing its weight and rendering it more convenient for handling and stowage. It should not be extensively duplicated until after a thorough trial under service conditions, on board of such a ship devoted to this work. The improvements can be made at this navy yard as well as the bulk of such outfits to be issued to the fleet in future.

37. In the same way experiments with aeroplane-hoisting apparatus and the methods of stowage could be made on board of this ship and the details of improvements carried out at the aeronautic center.

38. This ship should have a large supply of spare parts and a spare motor for each machine, as well as spares of all instruments used in navigating. In fact, she should afford an excellent medium for the service tests of different makes of such instruments.

39. She should be employed in conjunction with dirigible flights at sea, in the Gulf, to make such tests as the practicability of replenishing an airship with fresh supplies of fuel and hydrogen, the accuracy of bomb-dropping appliances, and the tactics to be employed in contests between aeroplanes and dirigibles.

40. This ship should not be regarded as such a fixture, storeship, or barracks that she could not leave with an extra supply of aeroplanes and certified pilots to join the fleet on short notice. Therefore, the shore establishment in aviation should not be absolutely dependent upon her. The graduates, the certified pilots, and the advanced mechanicians transferred to this ship for advanced instruction, practice, and experiments should be subsequently transferred to the fleet. The land section of the flying school should be stationed on shore at the aeronautic center.

PERSONNEL OF THE FLYING SCHOOL.

41. *The sea section.*—In addition to the commanding officer, the reserve ship (of the sea section) should have the usual ship's complement for ships in reserve, and there should be three experienced air pilots who would be available for ship duties on occa-

ation, when necessary, but whose principal duties should be instruction work connected with aeronautics.

42. *The land section.*—In charge of an officer of the aeronautic division.

Equipment.

Six permanent hangars, to begin with, and as many more as may be necessary in the future, convenient to water front and landing facilities.

Tent hangars to be available always for temporary use until permanent hangars are provided.

Adequate facilities for practice in alighting on land and ascending therefrom should be provided in addition to the facilities for water practice. Suitable wharfage convenient to the hangars should be provided.

The present equipment of aeroplanes and spare parts should be transferred to the aeronautic center.

In addition to the equipment of aeroplanes, spare parts, and tools, the following should be provided:

Two motor tractors, one for dirigible service and one for aeroplane service.

One tug lighter, with mast for hoisting capsize aeroplanes.

Two motor boats of about 25 miles per hour and capacity for six passengers, for patrol duty during flying practice.

Two motor dorys.

One fast boat, for work at sea, outside of the harbor; a reserve torpedo boat with good maneuvering qualities is recommended.

LABORATORY WORK AND DESIGN.

43. The board recommends that the aeronautic laboratory work of the Navy, and the staff for designing and research in connection therewith, be located at the Washington Navy Yard, in connection with the model basin, and in cooperation with the national aeronautic laboratory.

COURSE OF INSTRUCTION AND DUTY FOR STUDENTS AND AIR PILOTS.

44. It is recommended that instruction and duty be carried out along the following lines:

(1) Practical work around machines, including repairing and overhauling, assembling, and disassembling, etc. Theoretical study to be carried on at the same time from the books and files of the aeronautical library.

(2) Instruction in flying, according to the system now used at the naval aviation camp, or modified, as developments may warrant. Dirigible instruction along lines which will be drawn up after some officers have had experience in this branch.

(3) When a pupil has had sufficient practice alone, he should be permitted to take the test for naval air pilot certificate, and when this test is passed, he should be considered as available for duty with the sea section, or with advanced base outfits.

(4) If any student aviator is found unsuited for the aeronautical duty to which he is assigned, he should be immediately detached, on the recommendation of the senior instructor. Such action, however, should not affect the officer's promotion.

(5) All air pilots who can be spared, and who have been recommended by their commanding officers for advanced instruction in aeronautical engineering, should be sent each year to the institution giving the best course in that study, for a full term. Eventually, it is hoped that this post-graduate instruction may be conducted at the Naval Academy.

(6) One or more air pilots should be selected each year for experimental work connected with the air-craft factory and national laboratory, it being understood that this selection will be made from those who have received the course in aeronautical engineering, provided they have shown special aptitude for such work during their records as pilots. There should be no hesitation about sending officers of the aeronautical branch abroad to study foreign methods.

(7) It is recommended that all graduate air pilots who are not actually engaged in flying be considered as reserve pilots to be called in case of emergency, and that every reasonable effort be made to give these reserve pilots an opportunity to secure actual practice.

(8) The duty of officers and men on this service should not operate to prejudice their advancement, and their service in aeronautical work, whether on shore or at sea, should be regarded as sea service so far as it is requisite for promotion.

AERONAUTIC SERVICE WITH THE FLEET.

45. After certified air pilots have been transferred to the sea section, they should become available, on recommendation of the commanding officer of base ship in reserve (at Pensacola), for transfer to a ship of the fleet in charge of an aeroplane attached to that ship.

46. The process of supplying air pilots to ships of the fleet will be gradual, one ship of each division being supplied first, but it is recommended that funds be provided sufficient to equip the fleet at once, in order to avoid delay in completing the outfit at the earliest practicable date.

THE DEPARTMENT ORGANIZATION.

47. The arrangements now in force for directing the development of naval aeronautics are lacking in stability and efficiency.

48. The general board, after reviewing the activities of other nations, made the following recommendations on August 30, 1913:

(a) "The establishment of an air department in the Navy Department under the division of operations, in charge of a director of naval aviation, not below the rank of captain, with the necessary assistants, and with the authority and responsibility to carry the organization into effect."

(b) "That the director of naval aviation, thus established, with his assistants, proceed with the organization of a naval air service, suited to the needs of the Navy in war."

49. The wording of subparagraph (a) may not have been intended, but may be construed, to mean the establishment of a separate air department or bureau. A separate bureau is unnecessary. Furthermore, it would conflict with the present legal status, which, in the opinion of the board, is adequate.

50. The effective working power of the present department organization is vested in the bureaus. They are intrusted with the bulk of expenditure in aeronautics, as well as in all other matters for such items as come under their cognizance, and the natural effort of each bureau is to be as independent as possible in the conduct of its business. It is also natural that great care is necessary to avoid confusion and friction in the execution of details vitally affecting other bureaus. It is, of course, necessary that all bureaus work for the production of efficiency in the general result and in consonance with the policy for which the Secretary of the Navy is responsible.

51. The chief factor in the harmonious operation of such a simple and efficient system is the same as that which exists in every organization or organism, i. e., efficient coordination. Our legs, our arms, hands, voice, etc., would not do their specific work in harmony without coordination. The stupendous task of coordination in the department organization has to be borne by the Secretary, and it needs no demonstration to show that in this respect he must have expert advice and assistance. This assistance is now provided, to a large extent, by the council of aids, each looking after a natural division of the labor, with authority to advise but not to execute. The system is theoretically perfect, but in practical working will be efficient only so long as the aids themselves are provided with sufficient assistance to free them from the burden of the details of new or special developments which require the constant efforts of some one man or group. Aeronautics, now advancing at a rapid pace, is such a development. The Marine Corps and each of the Bureaus of Navigation, Construction and Repair, Steam Engineering, and Ordnance require one or more special officers detailed to keep in touch with its progress, especially with the details over which each branch has cognizance, and these representatives should be intrusted with the handling of details, the execution of which requires action by the bureaus.

52. It is even more important that the Secretary's office have at least one representative specially engaged in the study and in the coordination necessary to insure progress in harmony with the policy of the administration and the broad fields of strategy and tactics. And it is particularly important that the records of this coordination be kept in an office where the representatives of the bureaus may meet for discussion, for expanding their information, and to which the Secretary may refer when information on the subject is needed promptly or directions are to be prepared affecting the aeronautical work of the bureaus or the operations of the fleet. This office should be supplied with a library, consisting mostly of current aeronautical publications, and should keep systematic files of classified information, and copies of all aeronautical reports obtained through the Office of Naval Intelligence and the log books of the Flying School.

53. A certain amount of progress has been made in the development of aviation, so far, by placing it in charge of an officer under one bureau, but the work has grown so rapidly and the difficulties have increased to such an extent that the work, as it affects

the whole organization, can not be coordinated efficiently in this way. The instruction, the training, and the details of aeronautical personnel over which the Bureau of Navigation has cognizance are, probably, the most important factors in the whole development, since upon the proper conduct of these functions depends largely the practical information and the specialized intelligence that is to be our principal dependence in the future. But the bureau itself can not spare time to specialize on this subject, in view of the large problems with which it is concerned, and the best interests of this development, particularly the coordination with other bureaus, are apt to be unduly subordinated to existing conditions resulting from other details with which the bureau is most familiar. In this way one bureau may unwittingly fail to do its best by the development, while charged with its coordination, and yet another bureau might exaggerate the importance of the details with which it is concerned to the detriment of other bureaus under the same system of coordination.

54. The establishment of an office of naval aeronautics under the Secretary's office is absolutely essential to harmonious rapid progress in naval aeronautics, and the following outline expresses the view of the board as embodying the simplest, most economical plan, and yet one that is entirely legal and capable of much expansion without change as any development in future may show to be necessary.

55. *The office of naval aeronautics.*—Under the office of the Secretary of the Navy (Division of Personnel):

The director of naval aeronautics: An officer, of the rank of captain, if practicable, who shall coordinate the work of the office for the Secretary of the Navy, in conformity with the departmental organization and in cooperation with the necessary assistants representing the bureaus.

The assistant director: An officer, preferably of aeronautic experience, of the rank of commander, if practicable, who shall represent the director in his absence.

Other assistants: Representing each, the Bureau of Navigation, the Bureau of Construction and Repair, the Bureau of Steam Engineering, the Bureau of Ordnance, and the Marine Corps. One, at least, of the assistants shall be a qualified air pilot.

All assistants, with the director as chairman, shall form a board, or council, to investigate the problems connected with the development, maintenance, and instruction of the Naval Aeronautic Service, and to advise in the execution of details. Their duties on the board shall be in addition to their other duties, which will be largely, or entirely, as circumstances require, connected with the execution of details pertaining to aeronautics in the bureaus. These assistants shall be given ample facilities to familiarize themselves with the subject of aeronautics, and, whenever practicable, they should be qualified air pilots.

56. The services of a stenographer and typewriter are absolutely essential to the proper performance of this work, and the board recommends that immediate steps be taken to secure his permanent appointment.

ESTIMATE OF EXPENDITURE REQUIRED.

57. The following estimate is made on the assumption that the Pensacola Navy Yard is available for use as an aeronautic center and, for this reason, does not include estimates for shops, quarters, barracks, wharves, etc., which would require much greater expenditure if the center be established elsewhere:

ESTIMATES IN DETAIL OF COST OF UNITS OF AERONAUTICAL ITEMS.

	Steam Engi- neering.	Construc- tion and Repair.	Ordnance.	Yards and Docks.	Naviga- tion.	Total.
ESTIMATES.						
Aeroplanes.....	\$3,000	\$3,500				\$6,500
Outfit.....	100	100			\$300	500
Spare engines and propellers.....	2,600					2,600
Spare parts.....	200	200				400
Total.....	5,900	3,800			300	10,000
10,000 cubic-meter dirigible.....	35,000	110,000				145,000
Outfit.....	200	200			500	900
Spare parts.....	25,000	2,000			100	27,100
Total.....	60,200	112,200			600	173,000
Double floating shed.....		90,000				90,000
Fixed hydrogen plant.....	5,000	4,000				9,000
Portable hydrogen plant.....	4,000	4,000				8,000
Portable hangars.....		800				800

ESTIMATES IN DETAIL OF COST OF UNITS OF AERONAUTICAL ITEMS—Continued.

	Steam Engi- neering.	Construc- tion and Repair.	Ord- nance.	Yards and Docks.	Naviga- tion.	Total.
ESTIMATES—continued.						
Fixed hangars.....				\$3,000		\$3,000
Mooring mast.....		\$1,200				1,200
2,200 m ³ dirigible.....	\$12,000	30,000			\$500	42,500
Captive balloon.....		800				800
Tractors.....				4,000		4,000
Trailers.....				200		200
Gasoline storage.....				4,000		4,000

ESTIMATES OF ITEMS AND APPROPRIATIONS TO ESTABLISH AN ADEQUATE NAVAL AERONAUTIC SERVICE.

FOR FLEET AND AERONAUTIC CENTER.						
50 aeroplanes.....	\$295,000	\$190,000			\$15,000	\$500,000
Fleet dirigible.....	60,200	112,200			600	173,000
Hydrogen sets.....	9,000	8,000				17,000
Double floating shed.....		90,000				90,000
Two vedettes.....	24,000	60,000			1,000	85,000
Mooring mast.....		1,200				1,200
Balloon.....		800				800
Hangars.....				\$18,000		18,000
3 motor boats.....	20,000	11,000				31,000
2 tractors.....				8,000		8,000
2 trailers.....				400		400
Gasoline storage.....				4,000		4,000
Maintenance.....		100,000				100,000
ADVANCE BASE MATERIAL.						
Aeroplanes and accessories.....			\$92,300			92,300
Dirigibles and accessories.....			177,000			177,000
Total.....	408,200	573,200	289,300	30,400	16,600	1,297,700

58. The board recommends that Congress be requested to appropriate for use as early as possible the amounts necessary for naval aeronautic work and that these amounts under the different appropriations, as follows, be in addition to those already requested by the bureaus in the estimates for the next naval appropriations:

Bureau.	Appropriation.	Additional amount.
Steam Engineering.....	Steam machinery.....	\$408,200
Construction and Repair.....	Construction and repair of vessels.....	573,200
Ordnance.....	Ordnance and ordnance stores.....	289,300
Yards and Docks.....	Maintenance, Bureau of Yards and Docks.....	8,400
Do.....	Public works (Pensacola).....	22,000
Navigation.....	Equipment of vessels (Navigation).....	16,600
	Total.....	1,297,700

Respectfully submitted.

W. IRVING CHAMBERS,
Captain, United States Navy, Senior Member.
 C. B. BRITAIN,
Commander, United States Navy, Member.
 S. S. ROBISON,
Commander, United States Navy, Member.
 M. H. SIMONS,
Lieutenant, United States Navy, Member.
 H. C. RICHARDSON,
Naval Constructor, United States Navy, Member.
 J. H. TOWERS,
Lieutenant, United States Navy, Member and Recorder.
 ALFRED A. CUNNINGHAM,
First Lieutenant, United States Marine Corps, Member.

Secretary DANIELS. I earnestly hope that the bill will pass, so that we can put a new bottom on the *Constellation* and repair her so that she can go to Baltimore for the celebration, and then she would be available for use in the future. We are using her now at Newport, where we have a radio school on the ship.

The CHAIRMAN. I believe you recommended that the ship be brought to Washington?

Secretary DANIELS. No. My recommendation is that she be repaired and be sent to the celebration in Baltimore and not to have any place fixed where she shall remain.

Mr. ROBERTS. If she goes any place where we have not a navy yard or station, that means an annual expense for berthing space?

Secretary DANIELS. Yes.

Mr. HOBSON. What is the estimated cost?

Secretary DANIELS. \$40,000 to \$50,000.

Mr. HOBSON. Will it cost that much?

Secretary DANIELS. I think it will cost all of that.

The CHAIRMAN. Will you please place in the record a brief synopsis of the history of the *Constellation*?

Secretary DANIELS. Yes; a brief history and a recommendation that she be repaired so that she can go to Baltimore.

Mr. ROBERTS. Can the work be done at Newport?

Secretary DANIELS. No.

Mr. ROBERTS. Is she strong enough to be towed to the nearest yard?

Secretary DANIELS. Yes.

Mr. TALBOTT. I will state in that connection that one of the flags preserved at Annapolis was captured by the *Constellation*.

The CHAIRMAN. Is there some other suggestion, Mr. Secretary, which you wish to make to the committee?

Secretary DANIELS. We have had some little discussion about navy-yard matters. I would like to put in the record a statement why we recommended the construction of a dry dock at Norfolk, Va., and why we recommended the building of a slip at Philadelphia.

The *Constellation* was one of six vessels authorized in 1794 by Congress, because, as the preamble of the bill recited, "the depredations committed by Algerine corsairs on the commerce of the United States render it necessary that a naval force be provided for its protection."

This vessel was designed by Joshua Humphreys, of Philadelphia, built at Baltimore under the supervision of Capt. Thomas Truxtun, and launched September 7, 1797, the second vessel of the United States Navy to go into the water.

From June, 1798, to 1801, the *Constellation*, under command of Capt. (later Commodore) Truxtun, operated in West Indian waters. During this time she successfully engaged and captured the French frigate *L'Insurgente*, off Basse Terre, the French ships *La Diligente* and *L'Union*, and destroyed the French frigate *La Vengeance*.

In 1802, the *Constellation*, Capt. Alexander Murray, was one of a squadron under Commodore Morris sent to blockade the port of Tripoli. While on this blockade she cut out 10 Tripolitan gunboats, causing them to be beached. She returned from this duty in March, 1803.

Early in 1804, the *Constellation*, Capt. Hugh G. Campbell, was again sent to Tripoli in a squadron under command of Commodore Barron. She remained on that station until 1805, when she returned and was placed in ordinary in the Eastern Branch, at the Washington Navy Yard, where she was rebuilt and given 14 inches more beam.

During the War of 1812 the *Constellation*, Capt. Charles Stewart, was blockaded in the vicinity of Norfolk by an English fleet, taking part in no engagements.

In 1815 the *Constellation*, Capt. Charles Gordon, was one of a squadron under Commodore Decatur sent against the Barbary pirates, where she remained until some time in 1819.

In the same year, under command of Capt. John B. Nicholson, this vessel fitted out at the Gosport (Norfolk) Navy Yard and was sent to Brazil as the flagship of Commodore Morris. Returning from this duty in April, 1820, the *Constellation* was fitted out for a cruise to the Pacific, and in May of the same year sailed under command of Capt. C. G. Ridgely for the Pacific Station via Cape Horn, where she cruised during 1820 and 1821. She returned to the Atlantic in 1822, arriving in August at the New York yard, where she was placed in ordinary until 1824.

She was placed in service in October, 1824, and sent to the West Indies under command of Capt. W. T. Woolsey, where she remained until 1828. Returning to the United States she was placed in ordinary at Norfolk.

In July, 1829, she was placed in service again and sailed for the Mediterranean under command of Capt. A. S. Wadsworth. She remained on that station until 1831, when she returned and was placed out of commission at Norfolk. Again in 1832 she was placed in service, under Capt. G. C. Read, and sent to the Mediterranean, where she remained until 1834. Returning she was laid up in Norfolk in December, 1834.

Being placed in commission again in August, 1835, the *Constellation* sailed for the West Indies, where she remained until 1838, under command of Commodore A. J. Dallas, Capt. M. P. Mix, and Capt. James McIntosh. Returning she was placed out of commission at Boston.

In 1840 she was again placed in commission under command of Capt. G. W. Storer and sailed for the Brazil station. She continued around the world via Cape of Good Hope and Cape Horn and arrived in Hampton Roads in 1844. She was placed out of commission at Norfolk and remained so until 1855, being rebuilt during that time.

In 1855 she was again placed in commission under command of Capt. C. H. Bell and sailed for the Mediterranean, where she remained until 1858, when she returned to New York.

In 1859 the *Constellation* was placed in commission under command of Capt. J. I. Nicholas and sailed for the African station, where she remained until 1861, watching for slave traders. Returning, she was placed out of commission at Portsmouth, N. H.

From 1862 to 1864 she was on duty in the Mediterranean under command of Commodore H. K. Thatcher and Capt. H. S. Stellwagen, protecting American commerce. Returning to the United States she reported to Admiral Farragut in the Gulf of Mexico and was sent from there to Norfolk for duty as receiving ship. In 1865 she was sent to Philadelphia for the same duty under command of Commander A. G. Clary and Commander Wm. Ronchendorff and Capt. J. de Camp. In 1868 she was placed out of commission.

From 1871 to 1893 she was used as a summer practice ship for midshipmen from the Naval Academy under command of numerous officers. The only other duties she performed during this time was a trip to Havre with stores for the Paris Exposition in 1878, a trip to the Mediterranean in 1879 with stores for the station ship, a trip to Ireland in 1880 with the New York Herald's Irish relief stores, and a trip to the Mediterranean in 1892, to collect stores for the Columbian Exposition.

After the completion of the practice cruise in 1893, the *Constellation* was taken to Norfolk for repairs, and in May, 1894, was towed to New port by the *Atlanta* to act as receiving ship at the place. She has remained there ever since, except for a few months in 1904, when she was overhauled at the New York Navy Yard.

COST TO REHABILITATE FOR BALTIMORE CELEBRATION, SEPTEMBER, 1914.

The *Constellation* is now at Newport, R. I. The vessel was inspected by a board of naval officers on July 8, 1913, the hull being reported in excellent condition and the ship structurally sound. The masts were found to be dry rotted. The work of rehabilitating this vessel could not be undertaken at Newport, and it is contemplated to tow her to the navy yard, New York for this purpose. It is believed that the ship need not be greatly altered to serve the purpose required in Baltimore in 1914, and then with little trouble could be placed in her present condition for service as a station ship. The principal items involved in putting the vessel in approximately the same condition as she was in 1814, with the exception of having wire-standing rigging instead of hemp, are as follows:

Rearrange quarters and interior of ship, etc.....	\$8, 000
Rearrange bridge and make alterations on spar deck.....	1, 500
Supply running and repair standing rigging, etc.....	4, 500
Supply dummy sail covers, etc.....	1, 000
Supply anchors, chests, hammocks, bags, and miscellaneous small fittings....	1, 000
Supply old fashioned galley ranges, removing present installation.....	500
Supply watch hoods, skylight covers, hammock clothes, tarpaulins, etc.....	1, 000
Supply three boats and outfits.....	2, 500

Repair decks, topside planking, etc.....	\$2,500
Dock ship and repair under-water body, etc.....	500
Paint ship inside and out, after scrubbing same.....	1,500
Renew topgallant masts and repair other masts.....	1,000
Repairs to hardware, furniture, and small fittings, etc.....	1,000
Remove modern bathtubs, toilets, flushing and fresh water systems, etc.....	1,500
Remove modern lighting system.....	500
Remove boiler, pump, etc.....	500
Manufacture and install guns similar to those used in 1814, and provide muskets, cutlasses, etc.....	10,500
Miscellaneous items.....	500
Total.....	40,000

In addition to the above it is estimated that it will require \$5,000 to restore the vessel to her present condition after the Baltimore celebration.

Total estimated cost of rehabilitation and restoration, \$45,000.

Time required, three months.

Mr. LEE. I should be glad to take that up with you now, Mr. Secretary.

Secretary DANIELS. All right, Mr. Lee.

Mr. LEE. Make your statement, please.

Secretary DANIELS. In the matter of dry docks, I think there is very real need for one on the Atlantic and one on the Pacific. We have recommended the construction of a dry dock at Hunters Point on the Pacific, and we have recommended one at Norfolk on the Atlantic. The reason we have recommended it at Norfolk is because the General Board and the experts and authorities of the Navy Department have said that it was important to have it there. We have the rendezvous of the fleet at Hampton Roads, the target practice is at Hampton Roads, and the fleet is at Hampton Roads necessarily for all the maneuvers more than at any other place. These were the reasons that influenced me to recommend the building of a dry dock at Norfolk.

The CHAIRMAN. Did you have a report of the General Board on the subject?

Secretary DANIELS. Yes. I would like to insert in the hearings their recommendation and the recommendation of the department.

The CHAIRMAN. Very well.

Secretary DANIELS. The recommendations of the General Board are given for a term of years in the following memoranda. The department's recommendations are contained in the estimates for the fiscal year 1915. It must be borne in mind that docks required at the present time should have, at the least, the dimensions of the Panama Canal locks, 1,000 feet long, 110 feet wide, and 40 feet deep. The channel depth should be 40 feet, according to the recommendation of the General Board approved by the department. The necessity for this channel depth is made clear in the memorandum on that subject which appears below.

[Memorandum for aid for material relative to dry dock at Norfolk.]

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
Washington, December 12, 1913.

In January, 1910, the Secretary of the Navy asked for the opinion of the board "as to the advisability of broadening the channel or of construction of new dock rather than to increase the length of the old one" at Norfolk.

2. The general board in its reply dated January 29, 1910, stated as follows:

"In view of the impracticability of docking a ship of that length with the present limited width of the stream, and in view of the difficulty of docking such a vessel

even if the water front opposite the dock should be acquired by the Government and the stream widened by dredging; and further, in view of the necessity for at least one additional dry dock at the Norfolk Yard in the proper development of that yard for future naval needs, it is on the whole not advisable to lengthen this dock. But it believes, in view of the importance of the Norfolk Navy Yard and the future demands which will be made upon it, that a new dock capable of taking a ship 750 feet in length and 100 feet beam should be provided for, and that this dock should be properly located with respect to the axis of the river as indicated in the plan for development of the navy yard at Norfolk, dated November 15, 1909."

The composition of the general board at this time was Admiral Dewey, Rear Admiral R. P. Rodgers, Rear Admiral William Swift, Rear Admiral Wainwright, Rear Admiral Ingersoll, Capt. Staunton, Capt. Howard, Capt. Potts, Capt. Gleaves, and Capt. Knapp.

3. In June, 1911, the department requested recommendation from the General Board as to the best location for additional docking facilities on the Atlantic coast. The General Board in its reply dated June 29, 1911, stated as follows:

"The General Board, after maturely considering the docking facilities already available on the Atlantic coast, and the sites available at the different yards, together with the approaches thereto from the sea, have to recommend that the best location for another dock is the Norfolk Navy Yard."

The composition of the General Board at this time was as follows: Admiral Dewey, Rear Admiral R. P. Rodgers, Rear Admiral Wainwright, Rear Admiral Mason, Capt. B. A. Fiske, Capt. F. F. Fletcher, Capt. T. M. Potts, Capt. W. J. Maxwell.

4. In June, 1913, a report by the chief of the Bureau of Yards and Docks calling attention to the necessity for additional dry docks was referred to the General Board for recommendation. The following is an extract from the General Board's indorsement thereon, dated June 30, 1913:

"Referring to paragraph 7 of the bureau's letter: The General Board concurs in the opinion that the four docks mentioned, at New York, Norfolk, Puget Sound, and San Francisco Bay, are necessary, and it believes that a modern graving dock at Guantanamo is necessary also. One dock in the Atlantic and one in the Pacific should be undertaken at once. The General Board advises that the first to be built in the Pacific be located in San Francisco Bay, and the first in the Atlantic at Guantanamo, and that the preliminary studies and estimates for all these docks be directed by the department."

The composition of the General Board is the same at the present time as it was at the date of this indorsement, no changes having taken place since that time.

5. In January, 1912, in reference to a bill introduced by Mr. Moore of Pennsylvania, relative to the construction of a dry dock at the Philadelphia yard, the General Board stated as follows:

"There is no military necessity for another dry dock at the Philadelphia yard at the present time. This yard has now one dock capable of docking the *Utah* and all earlier vessels. In future, when vessels of the size of the *New York* and *Texas* are placed in reserve in the second line, another dock of a larger size will be required at Philadelphia, probably not earlier than 1925. Attention is invited to the General Board's reply to the department's letter of June 24, 1911, in which a new dock at the navy yard, Norfolk, is recommended."

The composition of the General Board at that time was as follows: Admiral Dewey, Rear Admiral Wainwright, Rear Admiral Staunton, Rear Admiral Mason, Rear Admiral Vreeland, Rear Admiral Fletcher, Capt. Potts, Capt. Winterhalter, and Capt. W. L. Rodgers.

[Memorandum for aid for material relative to drydock at Norfolk. (Supplementary to memorandum of December 12, 1913.)]

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
Washington.

October 2, 1906 (G. B. No. 404).—In a study of navy-yard development "with a view to formulating a general policy in regard to our docking and repairing facilities," paragraph 12, "The general policy thought desirable by the General Board for the different navy yards and naval stations may be summarized as follows:

* * * * *

"*League Island, Pa.*—The General Board is of opinion that considering the depth and length of channel leading to this yard, the existing facilities are, with the slight

additions needed from time to time to suit modern conditions, ample; and it advises against any marked development of this station.

"The deep fresh water basin at League Island, its availability for placing ships in reserve, and its proximity to the sources of coal and iron, and to the great shipbuilding establishments on the Delaware will always give this station a definite value.

"*Norfolk, Va.*—The General Board is of opinion that this yard should be steadily developed and efforts made to deepen the channels leading to it in the course of the next few years.

"The Chesapeake Bay region is so important in its strategic position that we can not afford to sacrifice the advantage which that position gives, even though some dredging will be required in the lower part of the bay to make efficient use of the navy yard facilities at Norfolk and the shipbuilding and repair facilities at Newport News. The existence of coaling and repair facilities at both Norfolk and Newport News, in the same locality and with the same entrance channel, adds greatly to the strategic importance of the lower Chesapeake.

"The lower part of the Chesapeake, of which Norfolk and Newport News are the important centers, furnish, with the system of forts at Hampton Roads and on Cape Henry and the Middle Ground, a complete key to the important cities of Baltimore and Washington and their effectual defense.

"In this connection the board desires to point out that the Chesapeake Bay above Hampton Roads is not available without extensive dredging for either floating or permanent docks for the repair of deep draft or injured vessels on account of the large area of shoal water just abreast of York River. This area extends across the bay and for a width of about 2½ miles in a north and south line has a least depth of 31 feet of water at mean low water. Not more than 30 feet can be depended on over this area because there are three sand spots of 30 feet depth whose positions would probably vary from time to time. The navigation of this area by vessels drawing nearly that much would be difficult."

The composition of the General Board at this time was as follows: Admiral Dewey, Rear Admiral Converse, Capt. R. P. Rodgers, Capt. J. P. Merrell, Capt. W. J. Barnette, Capt. R. Wainwright, and Capt. N. Sargent.

October 19, 1908 (G. B. No. 404).—Report supplemental to that of October 2, 1908:

"4. * * * the General Board believes the general policy should be as follows: To develop the navy yards at New York, Philadelphia, Norfolk, Puget Sound, and Mare Island to their full capacity for the repair of ships. * * *

"5. The General Board also believes it to be good general policy to utilize so far as possible the docking facilities at Portsmouth, Boston, New York, Philadelphia, and Puget Sound, as well as the docks at Norfolk and San Francisco when completed.

February 8, 1909 (G. B. No. 404).—Replying to request of Senator Beveridge for information about various navy yards, and policy as to yards:

"* * * With regard to the question of the selection of the sites of the other navy yards, if such selection had to be made at this time, the General Board is of the opinion that two or at the most three yards would be selected on the Atlantic coast and two on the Pacific coast. The strategic importance at this time would govern, having also in view proper depth of water, distance from the sea, and proximity to sources of supply of material and skilled labor. These considerations would naturally lead to a selection near New York inside the defenses of that port for one, within the capes of the Chesapeake for a second, and perhaps at a point near Philadelphia for the third. The yards at New York, Norfolk, and Philadelphia fulfill the important conditions stated on the Atlantic coast."

December 17, 1909 (G. B. No. 404).—The following is quoted from G. B. No. 404 of December 17, 1909, which was a reply to a memorandum from the Secretary of the Navy (Dec. 7, 1909) requesting consideration of the question of dimensions of new dry docks.

"7. There are no docks under construction or contract on the Atlantic coast which can take a battleship of 30,000 tons, and only one dock (No. 4 at New York) when completed which can dock the *Wyoming* class, and in this connection the General Board invites attention to the advantage which would ensue if Dry Dock No. 3 at Norfolk is lengthened. * * *

"14. In fixing a depth of 35 feet over the sill (and blocks) at mean high water the General Board desires to make it plain that it sees no objection to having a greater depth, but on the contrary believes that such greater depth would be an advantage. Almost all of the newest and largest docks in the world have a greater depth than 35 feet, some as much as 40. There are a few foreign merchant ships now that have a deep-load draft of 34–35 feet. But 35 feet is the dredged depth contracted for at Pearl Harbor; it is the most that can be carried over Diamond Reef near Governors Island on the way to the New York yard, and is more than can be carried through the

Wallabout from East River to the navy yard; it is 5 feet more than the depth guaranteed by the Army engineers in the dredged channel to Norfolk, and 8 feet more than is now provided in parts of the channel to Philadelphia; so that the limit of 35 feet over the sill, while providing for the docking of wounded ships of war, will be for years to come in advance of the depth of channels leading to our principal navy yards on the Atlantic coast. Many miles of dredging in the aggregate will be required before 35-foot ships will be able to reach the navy yard docks and wharves at New York, Philadelphia, and Norfolk.

"17. The situation that would confront a wounded ship at Norfolk is one to which the attention of the department is particularly invited. A wounded ship drawing over 30 feet *can not only not get to the Norfolk Navy Yard, but it can not get behind the existing defenses at Fort Monroe*, and there are no defenses at the entrance to the Chesapeake.
* * *

"19. (g) The General Board recommends that both of these docks (Pearl Harbor and Norfolk) be lengthened to take in ships 750 feet long, if practicable."

This was followed by a memorandum from the Secretary of the Navy, in January, 1910, asking for the opinion of the General Board "as to the advisability of broadening the channel or of constructing a new dock, rather than to increase the length of the old one," at Norfolk. An extract from the General Board's reply to this was contained in memorandum sent to aid for material on December 12, 1913.

An unsigned memorandum attached to the General Board's letter of June 29, 1911, quoted in memorandum of December 12, 1913, to aid for material, and presumably prepared for the consideration of the board at the time this letter was prepared, contains the following:

"Philadelphia Navy Yard.—Plenty of room for docking sites. Fairly good ground. Proposition already in hand to run present dock or a new one through to back channel, making three docks in one with connection to inner basin. Nothing against another dock at this yard except the channel in the Delaware River and the distance from the sea. There are long reaches of dredged channel with 30 feet depth with long ranges and sharp turns. Generally necessary to wait for two tides in going out.

"Norfolk Navy Yard.—Plenty of room near dock No. 3 and good ground, but narrow channel, which can be obviated in a manner by establishing dock at angle with water front. The channel from Hampton Roads is not good. Thirty feet depth at present and several turns. Is much better, however, than Delaware River, and can be very easily deepened and straightened."

[Memorandum for aid for material.]

DEPARTMENT OF THE NAVY,
GENERAL BOARD,
Washington, February 9, 1914.

1. Dry dock No. 3, at Norfolk, was first commenced in 1903; the contract to enlarge Dry Dock No. 3 was signed August 6, 1910; the enlargement was completed in 1911.

2. The General Board indorsement of January 29, 1910 (a portion of which was quoted in memorandum to you of December 12, 1913), was in reply to an inquiry by the Secretary of the Navy regarding the question of lengthening Dry Dock No. 3 or constructing a new dock at Norfolk. All indorsements quoted regarding additional docks at Norfolk refer to a fourth dock.

3. Regarding dock at Puget Sound, reference to which is quoted in paragraph 4 of memorandum to you of December 12, and about which you asked this morning: The recommendation for additional docking facilities at that yard was made by Chief of Bureau of Yards and Docks in June, 1913, and concurred in by the General Board, the large dock (No. 2) at that yard having been completed a short time previously.

[Memorandum: Subject, 40-foot channels.]

The General Board submitted the following recommendations under date of October 22, 1912:

"The General Board recommends that channels leading to all first-class docking, repair, and supply yards be dredged to a depth of 40 feet at mean low water."

Attached to this memorandum are certain extracts from authoritative sources bearing on the necessity for this depth of channel. It appears from this that the following is established:

1. The increase in size of ships, both war and commercial, has been very rapid in recent years.

2. While it is impossible to determine along what line the future increases will be, it is to be noted that the latest increases in draft of commercial vessels have been very marked.

3. Any of these large commercial vessels may be requisitioned in time of war and required to enter any of our principal navy yards.

4. Commercial considerations determine the size of vessels, and present indications point to further increase in size.

5. There are ships now with a load draft of 38 feet.

6. On account of the "squat" of vessels passing through the water additional depth of channels must be provided in excess of the load draft.

It appears, therefore, that the recommendation of the General Board, as above quoted, is sound for reasons both of commerce and of national defense, and it has received the approval of the department.

EXTRACTS BEARING ON NECESSITY FOR 40-FOOT CHANNELS.

In answer to question "Is there an upper limit of size for ships?" Sir William White, says:

"Higher speeds and greater carrying capacities can and will be obtained by naval architects, if they are demanded by shipowners. In my opinion the question is one to be answered by shipowners rather than shipbuilders; the decision will be based on commercial grounds and not on professional consideration." (1)

Also, "If speeds are to be still further increased, it would undoubtedly be of great advantage to naval architects to have a greater margin of draft of water than is now available at most of the principal ports; and if such a margin is not provided the lengths and costs of ships must be made greater." (1)

Dr. E. L. Corthell, at the Twelfth International Congress of Navigation, Philadelphia, 1912, says in his report:

"It has often been stated that the maritime canals of the world need not be built to receive the trans-Atlantic liners, since they ply only between important European and North American ports, but it must be borne in mind that every one of the great maritime powers of the world may in case of war make requisition for any ship of its flag to carry troops, war material, and provisions or do service as auxiliary cruisers, and consequently there is no great maritime canal that may not be called upon at any time to let these ships pass—that is, the *Olympic*, *Aquitania*, *Europa*, or any other of the great North Atlantic liners may be forced into this service at any moment. (2)

"A maritime canal must be designed to take the largest merchant and naval ships of the world. That the author is not alone in this opinion may be seen by the fact that the locks of the Kaiser Wilhelm Canal are now being enlarged, at a cost of \$53,000,000, to take the largest freight and naval vessels of the future. They have a chamber length of 1,083 feet, 148 feet width and 45 feet depth. The reason for the very large locks is because the ships will without doubt increase in size, but it can not be known as yet in what direction and how much the enlargement will be. (2)

"In 1898 the author thoroughly investigated the changes and developments of vessels, sail and steam, studying the registers of shipping and histories and papers on the subject during two months in the libraries of the British Museum and the Institution of Civil Engineers, London. He compiled all available information and traced along 17 different lines the changes in sailing and steam vessels from 1848 to 1898, and, desiring to determine approximately the future changes reasonably to be expected, he predicted by tables, curves, and graphical diagrams the situation through and to the end of the coming half century, 1948. These predictions made in 1898 for 1910-11, considered extravagant by some, are behind the actual dimensions of 1910-11, and, except in one case, the actual dimensions of 1910-11 exceed those predicted for 1923 and in the case of load draft, the actual average for 1910-11 exceeds the predictions for 1948 by 2 feet. Comment is unnecessary. (2)

"The fact that at the Kaiser Wilhelm Canal and at the Panama Canal lock entrances of 45-foot depth are being provided now is quite sufficient proof that navigation is not shaping its tools—the steamers—to conform to existing depth of ports and canals, but that the latter are shaping their tools to handle the commerce that the tools of navigation—the steamers—are bringing to them. The size of merchant ships is determined by the inexorable laws of commerce. (2)

"The author is of the opinion that the dimensions of the 20 largest ocean vessels predicted by him in 1898 for 1948 should, in the light of the information given in this report, be increased from 1,000 by 100 by 33 feet to 1,100 by 110 by 40 feet, with, naturally, a margin over these dimensions in the chambers of locks and in the open sections

of canals, and to allow especially for the reduction in depth caused by the movement of the ship through the water.

"This lowering of the water surface, or rather the sinking of the ship, is a phenomenon with which all navigators and hydraulic engineers are familiar.

"The Suez Canal authorities allow for this by requiring all steamships to have 3 feet of water under the keel." (2)

Mr. Henry N. Babcock, United States assistant engineer, New York, says:

"On September 21, 1910, I made 'squat' observations on the steamship *Mauretania*. The observations generally show that the amount of 'squat' increases:

"1. Inversely with depth of water under the keel.

"2. Directly with speed.

"3. Directly with fineness of ship's lines.

"I have not yet been able to get any definite ratio of variations, other than the crude one (gotten up for pilots), that when a ship is near the bottom her squat in feet may be about one-fifth of her speed in statute miles per hour. (3)

"The final-depth conditions of the prism of the Panama Canal are as follows: Limon Bay (Caribbean Sea) to the Gatun Locks, 41 feet at mean tide. On the Pacific side the depth will be 45 feet at mean tide. The depth through Culebra Cut, about 9 miles, will be 45 feet.

"The Suez Canal has had many vicissitudes and a constant development, due to commercial requirements. The steamships have been obliged, greatly to the detriment of trade, on the long course from western Europe to the Orient to keep their dimensions at a minimum, especially their draft, but the insistence of commerce has continually forced the canal company to make greater dimensions.

"The American Isthmian and Suez Canals have been discussed mainly for the purpose of showing how, in half a century of effort to build and operate them, commerce has compelled greater and greater dimensions continually, and it is still doing it. (2)

"Mr. Eich, chief engineer of the Kaiser Wilhelm Canal, who had given this question careful study and consideration, gives the following dimensions of the merchandise ship of the future—984 feet long, 105 feet wide, 38 feet draft.

"The largest steamer now is 50,000 gross tonnage, over 900 feet long, 96 feet wide, with a maximum draft about 38 feet." (2)

The Board of Consulting Engineers for the Panama Canal says in its report, January 10, 1906:

"The Spooner Act provides that the Panama Canal 'shall be of sufficient capacity and depth as shall afford convenient passage for vessels of the largest tonnage and greatest draft now in use, and such as may be reasonably anticipated.' Since the passage of this act the Cunard Co. has projected two ships for the North Atlantic route of very much larger dimensions than any built heretofore. The new ships are to be 800 feet long, 88 feet beam, and to have a draft of 36 feet. They are specially designed for fast service between England and New York. They are subsidized by the British Government, are to be at its service in time of war, and are not likely in any conceivable circumstances to traverse the Panama Canal. But the language of the act makes it necessary to plan the canal for these ships and for larger ones if they 'may be reasonably anticipated.' What are the ship dimensions which may be reasonably anticipated is a question about which great difference of opinion may exist. (4, p. 80.)

"Whenever, in recent times, natural waterways have been improved or artificial channels made for purposes of navigation the original work has been speedily followed by demands for deeper, wider, and straighter channels. All these particulars have been notably exemplified in the entrance channels to New York Harbor, where the new channel will have a width of 1,000 feet and a depth of 40 feet." (4, p. 82.)

Sir William White says:

"Up to the present time the response made to the appeal from shipowners for increased accommodations for larger ships by authorities of the great seaports of the world has been neither niggardly nor unsatisfactory. At the present moment extensive and costly works are in progress which will provide accommodation for the largest ships now building and leave some margin for further developments. The Ambrose Channel to New York and the new docks provided at that port for the great trans-Atlantic liners furnish illustrations of the foregoing statement. At Liverpool and Southampton corresponding works are in course of performance, while still larger schemes are contemplated. It is not necessary to amplify this list, because it is a matter of common knowledge that all over the maritime world the same policy is being followed. Immense sums are being expended on improvements and extensions of docks and harbors as well as on the approaches thereto, both by Governments and by proprietary bodies. (5, p. 6.)

"It is not my purpose to attempt any prediction of what the limit of depth of water will be in the future. For the moment 40 feet of water at low tide seems to be the

maximum contemplated. In the end, however, commercial considerations must prevail, and dividends must be earned by docks and harbors as well as by ships. The advantages to be obtained by the whole community, and not the profit of a particular section, ought and will determine what is done eventually." (5, p. 7.)

Mr. Lewis Nixon says:

"I quite agree that 40 feet seems to be the low limit for the Panama Canal, and it is probable that ships will want to use that draft at least." (6, p. 24.)

Capt. William Hovgaard says:

"That the size of ships will grow at least as fast as the harbors and docks permit we may perhaps conclude from past experience, having in mind the probable increase in the volume of traffic. It seems likely to me, therefore, that in the future we shall see a very great increase in the size of merchant ships, although it may be wise at present to pause for a time until harbors and docks have been further enlarged, and until commerce has developed to still greater proportions. There can be no doubt that the size of large warships has been increased too rapidly in recent years relative to the development of docks and harbors. While in time of peace this anomaly may cause certain inconveniences, it may in time of war lead to dangerous and fatal consequences. It may not be amiss to consider for a moment the case of the Russian squadron at Port Arthur during the Russo-Japanese War. The harbor entrance did not permit the Russian fleet to pass in or out except at high tide. This fact was taken advantage of by the Japanese, who on one occasion took up a position under cover of the Laotieh Shan hills where the fire of the Russian batteries could not reach them, and at a time when the Russian fleet could not leave the harbor because it was low tide. From this position the Japanese carried out an indirect bombardment of the Russian fleet which was lying helpless in the harbor. This incident shows the advisability of making timely and more liberal provisions for harbor facilities." (7, pp. 29-30.)

The Port of London Authority has recently decided that the depth over sills at the entrance locks shall be as follows: South Albert Dock, 48 feet; North Albert Dock, 52 feet; Tilbury Docks, 55 feet." (2.)

The General Board submitted the following recommendation under date of October 22, 1912:

"The General Board believes that the extreme dimensions of United States war vessels are set by the Panama Canal locks, which are 1,000 feet long, 110 feet wide, and 40 feet maximum draft. Ships are very rapidly approaching these limits.

"The General Board recommends that channels leading to all the first-class docking, repair, and supply yards be dredged to a depth of 40 feet at mean low water and to a least width of 750 feet and greater if practicable. Berthing areas at these yards should be dredged to a depth equal to the maximum draft of the ships to be berthed plus 1 foot clearance plus a number of feet that will prevent grounding at abnormally low water. Dry-docking facilities should be provided that can dock any vessel that can pass the canal."

This is based on the following memoranda:

"Existing channels or improvements already appropriated for will give a 35-foot channel at mean low water to navy yards at the following points: Boston, Philadelphia, Newport News, Norfolk, New Orleans, and Pearl Harbor.

"The following ports are or will be available at the same time: Portsmouth, 40-foot channel; New York, 40-foot channel; Columbia River entrance, 40-foot channel; San Francisco, 48-foot channel; Puget Sound, 42-foot channel.

"The depth at mean low water in navy yard areas where ships will berth must equal the maximum draft of the ship plus 1 foot for clearance, plus a number of feet sufficient to keep the ship from grounding at abnormally low tides. In general this condition will not be met if draft of ships is increased. This condition and dry docks seem to limit the draft of ships more than that of present channels. It would appear that the development in size of ships is barely taken care of by improvement to channels."

REFERENCES.

(1) Extract from the presidential address of Sir William Henry White, K. C. B., L. L. D., D. Sc., F. R. S., formerly chief constructor of the British Navy, honorable president of the Hartley University College Engineering Society, Southampton, January 29, 1910. London: Wm. Clowes & Sons (Ltd.), Duke Street, SE., 15 pp. See also *Shipping World*, March 16, 1910.

(2) Extract from report by Elmer L. Corthell, Dr. Sc., on "Dimensions to be given to maritime canals," at the twelfth International Congress of Navigation, Philadelphia, 1912.

(3) Mr. Henry N. Babcock, United States assistant engineer, New York (pp. 9 and 10 of Corthell's report above).

- (4) Report of Board of Consulting Engineers, Panama Canal. January 10, 1906.
 (5) Sir William H. White, in Transactions of the Society of Naval Architects and Marine Engineers, 1911.
 (6) Mr. Lewis Nixon, in Transactions of the Society of Naval Architects and Marine Engineers, 1911.
 (7) Capt. William Hovgaard, in Transactions of the Society of Naval Architects and Marine Engineers, 1911.

Mr. BRITTEN. I was told on the floor of the House yesterday that some three or four years ago the General Board preferred Philadelphia for the location of a dry dock. Is that true?

Secretary DANIELS. I never heard of it. The General Board's recommendation was in this order: First, at Guantanamo if we made large expenditures there, which we have not made; second, at Norfolk; third, at New York; and fourth, at Philadelphia. I think that was the order.

The CHAIRMAN. Mr. Secretary, if, as a fact, the General Board made a recommendation relative to Philadelphia several years ago, if there is such a report please put it in the hearings.

Secretary DANIELS. I will. I will also put in the hearings the General Board's views upon dry docks.

The following statement by the secretary of the General Board will be found to answer Mr. Britten's question above and to refute the statement made to him. As for the General Board's views upon dry docks, they will be found in previous and subsequent citations in these hearings:

DEPARTMENT OF THE NAVY,
 GENERAL BOARD,
Washington, February 9, 1914.

MEMORANDUM FOR AID FOR MATERIAL.

After a careful search of the files of the General Board I do not find any instance in which the General Board since its inception (in 1900) has expressed a preference for Philadelphia over Norfolk as a site for additional docking facilities for the fleet.

E. H. CAMPBELL,
*Commander, United States Navy,
 Secretary General Board.*

Mr. BRITTEN. Is it possible, Mr. Secretary, to also include a small map about the size of one of these pages, showing the position of the Norfolk Navy Yard from Hampton Roads and the ocean and the position of the Philadelphia Navy Yard from the ocean?

Secretary DANIELS. Yes; we could have that made.

The CHAIRMAN. The printing of those maps would be very expensive, but you could furnish them for the members of the committee?

Secretary DANIELS. Yes.

Mr. BRITTEN. That would do just as well.

The CHAIRMAN. I would not want to go to the extra expense to print the maps in the hearings.

Mr. BRITTEN. Then each member of the committee will be supplied with one of those maps?

The CHAIRMAN. Yes.

Mr. LEE. Have you finished, Mr. Secretary?

Secretary DANIELS. Yes.

Mr. LEE. Last July the Committee on Naval Affairs took a trip to investigate the different navy yards on the Atlantic coast. I would like to have you state to the committee why you had them take that trip.

Secretary DANIELS. I was glad the committee visited the navy yards. I thought that they would understand then the real needs of the Navy, and it would be of great value to them in the preparation of the appropriation bill.

The CHAIRMAN. That trip was begun before you became Secretary of the Navy, and we were on the ocean when you became Secretary of the Navy?

Secretary DANIELS. That is a fact. I was very glad it was continued.

Mr. LEE. Mr. Secretary, if this committee saw fit to place a dry-dock at the League Island Navy Yard, would you indorse their action?

Secretary DANIELS. If this committee made the recommendation and if the appropriation bill carried the appropriation I should carry out the will of Congress.

Mr. LEE. Last year when Secretary Meyer appeared before the committee he also recommended a dry dock on the Atlantic coast and one on the Pacific coast. In answer to a question from the chairman of the committee the Secretary of the Navy stated that he would leave the location of the dry dock to the judgment of the Naval Committee. Would you do that?

Secretary DANIELS. He got no dry dock anywhere.

Mr. LEE. But the committee recommended that it be built at Philadelphia.

Secretary DANIELS. I would say this, Mr. Lee, I take it as my duty to make an earnest recommendation for the place where it is most needed and where the vessels rendezvous most. That is my duty, and to give reasons for it. Of course, when I have given those reasons it is for the committee to decide.

Mr. LEE. If the committee should indorse Philadelphia, will you indorse Philadelphia?

Secretary DANIELS. If the committee should authorize a dry dock built at Philadelphia, I will build one at Philadelphia, according to their recommendation.

Mr. LEE. You would indorse the proposition?

Secretary DANIELS. I would still think that Norfolk was the place for it and that the committee had made a mistake, but I would follow their decree, because they are the men who give the orders and appropriate the money.

Mr. LEE. The General Board has recommended four battleships?

Secretary DANIELS. Yes.

Mr. LEE. Are you in favor of four battleships?

Secretary DANIELS. I do not think, in view of the probable revenues and expenditures, that Congress would be warranted this year in spending so much money.

Mr. LEE. If this committee were to authorize four battleships?

Secretary DANIELS. I would build four.

Mr. LEE. You are not against Philadelphia if the committee should vote to place a dry dock there?

Secretary DANIELS. I would not want to be put in the attitude of being against any proposition that looked toward the development of the Navy, but I think that the wise thing to do for the Navy is for this Congress to authorize the building of a slip at Philadelphia and

a dry dock at Norfolk. That is the program which I think should be carried out.

Mr. LEE. If the committee should see fit not to carry out the program which you say the General Board has recommended for the construction of dry docks and battleships, you will carry out whatever instructions the committee may give?

Secretary DANIELS. Whatever instructions are contained in the bill, of course I will carry out in good faith.

Mr. LEE. But if the committee in making up the bill should say that this dry dock should be constructed at Philadelphia, will you indorse their action?

Secretary DANIELS. I do not think the committee would ask me to indorse their action; but I certainly would bow to the action of this committee.

The CHAIRMAN. I think, Mr. Lee, that the Secretary answered your question, that he would carry it out, but that he thought it would be a mistake.

Mr. LEE. Mr. Chairman, I will be glad to examine the Secretary, if you will give me the time.

The CHAIRMAN. I will be glad to, Mr. Lee. Proceed.

Mr. LEE. I would like to have the Secretary state why Philadelphia can not have this dry dock and what are his reasons for not recommending that it be built there.

Secretary DANIELS. I would not want to be put in the attitude of saying that. I am not opposing Philadelphia; I am just stating the place that needs it most and where it will serve the needs of the Navy best. I think that is Norfolk, for the reasons I have given, because you can not take the larger battleships to Philadelphia until you do more dredging.

Mr. LEE. What battleships can not we take, Mr. Secretary?

Secretary DANIELS. You can not take in the *Wyoming* or the *Arkansas*, nor any of the new dreadnaughts.

Mr. LEE. They can not get up the Delaware River?

Secretary DANIELS. They can not get into the dry dock.

Mr. LEE. Do you mean to say that they can not get up the Delaware River or into the dry dock.

Secretary DANIELS. They can not get into the dry dock.

Mr. LEE. Then we should have a larger dry dock there if that is the case, because it is the dry dock which is too small and not the Delaware River.

Secretary DANIELS. I understand that there have been appropriations to dredge. Another thing, you must remember that you have a long ways to go to get to the dry dock at Philadelphia from the ocean. I have forgotten how far it is.

Mr. LEE. 83 miles.

Secretary DANIELS. Here is a memorandum showing the authorization of money to dredge a 30-foot channel from Philadelphia to the sea. They first authorized a 30-foot channel and now it is a 35-foot channel. The total appropriation for a 30-foot channel was \$10,176,002.08, and now for a 35-foot channel to the sea the cost will be \$10,920,000, plus an annual cost of \$300,000 for maintenance, authorized February 27, 1911, and estimated completion, 1921. I think it wise for the Navy to build a dry dock at Norfolk now and to

await building a great dry dock at Philadelphia until the dredging of the 35-foot channel is completed.

Mr. LEE. Can you tell me, Mr. Secretary, when the General Board made this recommendation which you speak of?

Secretary DANIELS. 1910, 1911—

Mr. LEE (interposing). I mean this year, Mr. Secretary.

Secretary DANIELS. The General Board, in commenting on the reports of inspection of the Atlantic and Gulf coast navy yards, in accordance with the department's instructions of September 20, 1913, stated:

Another and most important matter of general interest is that of docking facilities. * * * From its earliest days the General Board has from time to time invited the attention of the department to the need for increased docking facilities. On June 7, 1913, the Bureau of Yards and Docks submitted to the department a letter upon the subject of additional dry docks, to which and to the General Board's second indorsement thereon, No. 404, of June 30, 1913, the General Board invites special attention in the present connection. In that indorsement the General Board recommended that the first dock to be undertaken be that at Guantanamo, which is outside of the present discussion, as Guantanamo has not been inspected by the board of inspection for shore stations.

The General Board believes that an additional dock of modern dimensions (capable of taking any ship that can use the Panama Canal) should be built at Norfolk and New York at as early a date as possible. Such additional docks are now needed, in peace, as was made evident to the embarrassment of the department while the *Arkansas* was under repair recently; they are even more necessary in preparation for war demands at the yards of our two Atlantic bases. The General Board recommends that plans be prepared at once for each of these new docks, and that appropriations be sought for them at the earliest date that the department in its wisdom may judge expedient.

A new dock will eventually be needed at Philadelphia, but its immediate provision is not urgent as compared with Norfolk and New York. The General Board does not recommend new docks at Portsmouth, Boston, Charleston, Pensacola, or New Orleans. At Key West limited docking facilities are a part of the program of harbor improvements.

In June, 1913, I received the following from the General Board:

One dock in the Atlantic and one in the Pacific should be undertaken at once. The General Board advises that the first to be built in the Pacific be located in San Francisco Bay, and the first in the Atlantic at Guantanamo, and that the preliminary studies and estimates for all these docks be directed by the department.

And in December, 1913, the following:

The provision of a new dock at Philadelphia should wait upon the provision of new docks at Guantanamo, Norfolk, and New York, in that order of importance, unless appropriations can be obtained for simultaneous building.

The CHAIRMAN. Mr. Lee, you may proceed.

Mr. LEE. Mr. Secretary, is it because the Delaware River is not deep enough that you have recommended the dry dock to be placed at Norfolk?

Secretary DANIELS. The General Board has recommended that 40-foot channel be demanded for the places having the large dry docks.

Mr. LEE. That is not my question, Mr. Secretary. I ask you if it is because the Delaware River is not deep enough—if that is the reason you have recommended the dock to go to Norfolk?

Secretary DANIELS. No; not alone. I recommend it to go to Norfolk because it is chiefly needed at Norfolk and because the depth of water at the Philadelphia yard is only 30 feet, but I would recommend the dry dock to go to Norfolk rather than any other place on

the Atlantic coast, if the same things were equal everywhere, because it is needed more there.

Mr. LEE. Then your objection is that the Delaware River is not deep enough?

Secretary DANIELS. No; I have not said that. I object because—I am not objecting to Philadelphia—but I am in favor of going to Norfolk because we need it mostly there and it would be a better place to have the dry dock. Now, as between Philadelphia and Norfolk, I do not want to be put in the attitude of objecting to Philadelphia any more than objecting to New York or objecting to Charleston or Portsmouth or Boston. I am recommending the place where we need the dry dock in the next few years the most.

Mr. LEE. Have you a dry dock there now large enough to take the largest battleship afloat, or building?

Mr. WITHERSPOON. Yes; they all say that is large enough.

Secretary DANIELS. Yes. But, you see, we need another one there.

Mr. LEE. Do you think it is well to put all your eggs in one basket?

Secretary DANIELS. Well, I will say this about that, that the almost universal opinion of the naval experts, all the naval authorities, is that the great need is to have it in the farther south and Norfolk is the best navy yard in the South, because most of our enterprises and most of our cruisers and most of our ships that come out and go in the Caribbean and the Gulf go in that direction and it saves time; and the universal opinion of the Navy is that it ought to be at Norfolk.

Mr. LEE. Sometime ago the *Vermont* was crippled. They took her to the Norfolk Navy Yard. If she could have gotten in the dry dock at Philadelphia, would there have been any trouble to have taken her to Philadelphia?

Capt. WINTERHALTER. Not in the condition she was in. She had to be towed and it is a long narrow channel up the Delaware. But had her engine room been flooded, as might easily have happened when the shaft broke, you would have had a wounded ship and she would have drawn 10 feet more.

Mr. LEE. There is nothing in the argument that the *Vermont* could not have come to Philadelphia in her crippled condition?

Capt. WINTERHALTER. Not in the condition she was in, no.

Mr. LEE. You said if she had drawn 10 feet more of water you could not have gotten her there?

Capt. WINTERHALTER. No.

Mr. LEE. She could not have gotten to Norfolk either, could she?

Capt. WINTERHALTER. No, not in the present state of affairs.

Mr. LEE. Mr. Secretary, what would be the approximate cost of building this proposed dry dock at Norfolk?

Secretary DANIELS. About \$2,350,000.

Mr. LEE. Where do you propose to locate that dry dock?

Secretary DANIELS. Well, if we get the appropriation we will appoint a board to locate it at the best site.

Mr. LEE. But you have not selected it?

Secretary DANIELS. Not positively.

Mr. LEE. And can not positively say it would not cost more than that?

Secretary DANIELS. Here is a suggested site right here (indicating on map).

Mr. LEE. I have a large map here, Mr. Secretary, of the Norfolk Navy Yard.

Secretary DANIELS. Does that include the Schmoele tract?

Mr. LEE. Here it is (indicating on map).

Secretary DANIELS. You see, here is the proposed dry dock (indicating on map).

Mr. LEE. Here is your large dry dock now (indicating on map).

Secretary DANIELS. The proposed dry dock would come right here (indicating on map).

Mr. LEE. If the proposed dry dock would be located at that particular point, there would only be one entrance there.

What is the width of the Elizabeth River at that particular point?

Capt. WINTERHALTER. Nine hundred feet between pier heads and 1,500 in the direction of the dock.

Mr. LEE. I would be glad for you to point out any part of the Elizabeth River it is more than a 400-foot channel.

Capt. WINTERHALTER. It is between pierheads.

Mr. LEE. I understand; but I have the map here, and I would be glad to have anybody point out where it is more than 400 feet wide from the navy yard to Hampton Roads. I am talking about the channel, of course; not the river. I am not talking about the width of the river. The map shows the Elizabeth River channel is 400 feet wide. Where do you get it 1,500 feet wide?

Capt. WINTERHALTER. I say 900 between pierhead lines, Mr. Lee.

Mr. LEE. I understand, but we are talking about the channel now; we are not trying to put anything on the Elizabeth River that is not there. There is the map, Captain, and I ask anybody where the Elizabeth River Channel is more than 400 feet wide from the navy yard to Hampton Roads.

Secretary DANIELS. The experts say we could put the dry dock there and get the biggest ships in there.

Mr. LEE. The dry dock would be on the end of the Schmoele Tract, would it not?

Secretary DANIELS. Yes; on this end right here [indicating on map]; right near all the shops.

Mr. LEE. What are the conditions on the bottom of the Schmoele Tract?

Secretary DANIELS. What do you mean? Do you mean whether it is soft?

Mr. LEE. Yes; I would like to know what stratum is there.

Secretary DANIELS. I do not know fully, but you can excavate very cheaply. There is no rock and no very costly work.

Mr. LEE. What would be the expense of finding a suitable bottom?

Secretary DANIELS. The estimate is that everything would cost about \$2,350,000.

Mr. LEE. Have you been making borings to show that the bottom of the Schmoele Tract is safe?

Secretary DANIELS. We have some borings made and others are being made.

Mr. LEE. I asked some time ago to have the tests sent down to my office or to the committee. I have never received them, and if you have them I would be glad to have you send them to the committee so we could see what the tests were on the Schmoele tract.

Capt. WINTERHALTER. Those that have been made we can easily send.

Mr. LEE. Do you know anything about them?

Capt. WINTERHALTER. No.

Mr. LEE. And you are not sure anything would happen on the Schmoele tract—

Capt. WINTERHALTER. Oh, no; except the estimates of the engineers.

Mr. LEE. And you are not sure the same thing that happened at Pearl Harbor will not happen on the Schmoele tract?

Capt. WINTERHALTER. I know the Schmoele tract is not volcanic.

Mr. WITHERSPOON. May I ask a question here?

Mr. LEE. Yes.

Mr. WITHERSPOON. Now, with respect to the Elizabeth River, this is the line—

Capt. WINTERHALTER. This is the Elizabeth River (indicating on map).

Mr. WITHERSPOON. I want the lines of it, however.

Capt. WINTERHALTER. It is not on this chart. Have you the Coast Survey chart? If you have the Coast Survey chart, you will see practically the full length of the 35-foot dredged channel.

Mr. LEE. I will give you that information.

Mr. WITHERSPOON. I do not care anything about that. If you will just let him explain this to me—

Mr. LEE. Yes.

Mr. WITHERSPOON. Now, this is the dry dock that comes out into the river [indicating on map]?

Capt. WINTERHALTER. Up to there; that is the dry dock, and here is the machine shop [indicating on map].

Mr. WITHERSPOON. This goes south out to the ocean?

Capt. WINTERHALTER. No; this is the bridge [indicating].

Mr. WITHERSPOON. Now, here is what I want to find out: A ship comes in here from the ocean, to come into that dry dock. Now, if as he says (Mr. Lee) the channel is not over 400 feet wide there, and your ships are over 600 feet long, just explain to me how you would turn it so as to get in here [indicating on map]?

Capt. WINTERHALTER. That 400 feet Mr. Lee referred to of course is perpendicular to the channel. Your width of the channel must be measured perpendicular to the channel. This location is not perpendicular to the channel. You have an angle. That simply gives you so much more room this way, doesn't it?

Mr. WITHERSPOON. Do you mean that the ship would come in here and go a little to the outside of it and then back in? Is that the way you would get in?

Capt. WINTERHALTER. No. You can run her nose right up to the entrance of the dock here [indicating], and then turn slowly through this space [indicating]. As I say, when this pierhead line is finally established here, as it is to be by law and by the decision of the dock commissioners of Norfolk, you will have 900 feet on a line perpendicular to the channel. Obliquely, you have 1,500 feet.

Mr. WITHERSPOON. I understand the oblique, but that would not enable you to get your ships around if you bring your ship up here [indicating]?

Capt. WINTERHALTER. No. But you shove the nose of the ship perhaps a hundred feet in the dry dock, and that gives you room. I have turned the *Louisiana*, which is 450 feet, into the old dock.

Mr. WITHERSPOON. There is width enough?

Capt. WINTERHALTER. There is width enough, but it is a close fit.

Mr. LEE. You notice the dry dock points up the river?

Capt. WINTERHALTER. Yes.

Mr. LEE. If a battleship like the *Pennsylvania*, 623 feet long, should come up the Elizabeth River channel, which is 400 feet wide, how would anybody turn a ship into a dry dock, with the mouth of the dry dock facing up the river—when the ship was going up the river—and the channel only 400 feet wide?

Capt. WINTERHALTER. Now, Mr. Lee, if you will excuse me, you are assuming the *Pennsylvania* is going there. The *Pennsylvania* is not, under the present policy, going there for a long time to come.

Mr. LEE. I will change that and make it the *New York* or the *Texas*, which are 573 feet long.

Capt. WINTERHALTER. Yes. The *Texas* has docked there.

Mr. LEE. I would like you to explain to the committee, with a dry dock facing up the river, how a ship coming up the river, how it would turn in the channel, which is only 400 feet wide—how would you get a vessel to turn at that point and go into a dry dock which is facing up the river?

Capt. WINTERHALTER. I do not understand there is any difficulty if the dock faces up or down the river to put a vessel into the dock.

Mr. LEE. You would have to dock the vessel.

Capt. WINTERHALTER. Not necessarily. The tides ebb and flow, and the tide is not always running down the river.

Mr. LEE. I call your attention to the dry dock at Norfolk. If a battleship came up the river, it could more easily get into the old dry dock than it could into the proposed dock.

Capt. WINTERHALTER. You mean at an angle?

Mr. LEE. Yes.

Capt. WINTERHALTER. Perhaps it could. I won't say it could or could not. There is no trouble in docking the vessels. As far as the *Texas* is concerned, you know she has been in the present dry dock at Norfolk. There is no trouble about that.

Mr. LEE. Do you know how long it took to turn the *Texas* around when she went to Norfolk the last time?

Capt. WINTERHALTER. I do not know. I was not there. The pilot told me there was no trouble.

Mr. LEE. Do you know the only way they could get her around was to put her nose up in the dry dock 100 feet or more?

Capt. WINTERHALTER. Very likely, Mr. Lee; but those are the things we look out for in all cases.

Mr. LEE. Can you give us the width at the Delaware River fronting the navy yard?

Capt. WINTERHALTER. You mean the linear feet?

Mr. LEE. Yes.

Capt. WINTERHALTER. No; I could not. I think you will find that in the report of the chief of the Bureau of Yards and Docks. What you refer to, Mr. Lee, is the linear feet of berthing?

Mr. LEE. No; the distance between the channel and the navy yard.

Capt. WINTERHALTER. I could not tell you that without looking at the chart.

Mr. LEE. Is it not a fact that at the Philadelphia Navy Yard you could moor half a dozen battleships out in the river and still have room for commerce ships to pass?

Capt. WINTERHALTER. Yes. There is no particular reason, however, for mooring a half dozen battleships out in the river.

Mr. LEE. But if you wanted to do it you could?

Capt. WINTERHALTER. We might. Somebody might speculate on mooring 48 battleships in the Schmoele Tract.

Mr. LEE. If you wanted to moor 48 battleships in the Schmoele Tract, would you kindly tell the committee what it would cost to do that?

Capt. WINTERHALTER. I really do not know, Mr. Lee. You can get all sorts of developments by feats of imagination.

Mr. LEE. I understand; but you have made the remark that you could moor 48 battleships in the Schmoele Tract?

Capt. WINTERHALTER. No; I say if somebody wanted to do it. I did not say I wanted it or that it was at all a feasible scheme.

Mr. LEE. I will ask you this question: What would it cost to moor 48 battleships in the Schmoele Tract?

Capt. WINTERHALTER. I do not care to give an estimate.

Mr. LEE. Approximately, would it cost \$100,000 or \$5,000,000?

Capt. WINTERHALTER. I do not dare say, but naturally it would be a large sum to do that, Mr. Lee, but that is not a project that would be contemplated in reason.

Mr. LEE. You, as an expert of the Navy, would be able to give some idea as to what it would cost?

Capt. WINTERHALTER. No; I am not an expert in that line. That I would put up to the Navy Department experts in that line to figure out. In other words, that would be the province of the Bureau of Yards and Docks.

Mr. LEE. We had before the committee some time ago a tentative plan of developing the Schmoele Tract.

Secretary DANIELS. You mean a suggested plan?

Mr. LEE. Yes; that was taken up by the committee while Admiral Stanford was before the committee. I tried to get a copy of the plans later on, and suggested that the chairman of the committee try to get them. I have never been able to get them. It would seem to me, from this drawing we have before the committee of the Norfolk Navy Yard, that the plans you have here are on the Schmoele Tract, but just located in a different way. I would like to have you say what it would cost to build that present dry dock?

Capt. WINTERHALTER. In that shape?

Mr. LEE. The proposed dry dock; yes—and not figuring on making the river 1,500 feet wide. I would be glad also to have you tell me how much it will cost to make the Elizabeth River channel, which is 400 feet wide now, 1,500 wide, as you propose, at that point?

Secretary DANIELS. Here is the estimate for the building of the dry dock—\$2,350,000.

Mr. LEE. Will you kindly state who gave that estimate?

Capt. WINTERHALTER. The chief of the bureau.

Mr. LEE. Of yards and docks?

Capt. WINTERHALTER. Yes; I will put the whole recommendation in the hearing, Mr. Lee.

NAVY DEPARTMENT,
Washington, December 16, 1913.

To: Bureau of Yards and Docks.

Subject: Relative cost dry docks Philadelphia and Norfolk.

1. Pulsifer's Navy Yearbook, 1912, shows the cost of dry dock No. 2 at Philadelphia as \$1,471,550.67, and the cost of dry dock No. 3 at Norfolk as \$1,728,965.93.

2. Please analyze the above figures, showing in detail the reasons for the increased cost of the Norfolk dock over the dock at Philadelphia.

JOSEPHUS DANIELS.

[First indorsement.]

DECEMBER 26, 1913.

From: Bureau of Yards and Docks.

To: Navy Department (material).

Subject: Relative cost dry dock No. 2 at Philadelphia and No. 3 at Norfolk.

Reference: Department's letter 6133-102, December 16, 1913.

1. The following statement shows the cost itemized under various subheads:

	Norfolk.	Philadelphia.
1. Dock proper, except piling.....	\$1,370,722.87	\$1,022,160.35
2. Piling.....	107,935.96	130,712.22
3. Caisson.....	84,000.00	53,086.06
4. Capstans.....	24,400.00	12,330.41
5. Crane tracks.....	25,122.33	23,800.00
6. Pumping and power plant equipment.....	78,703.12	188,978.50
7. Dredging.....	38,081.65	12,475.30
8. Timber approaches.....		28,000.00
Total.....	1,728,965.93	1,471,550.67

2. The dock at Norfolk is granite lined; that at Philadelphia is lined with cement finish. The granite lining represents an additional cost of approximately \$230,000.

3. The dock at Norfolk was increased to its present length in 1910 by adding 182 feet at a cost of \$528,965.93. If this dock had been built full length at the time of the original contract, the 182 feet would have cost approximately \$250,000. The difference between what the lengthening actually cost under contract of 1910 and what it would have cost at the time of the original contract represents the cost of tearing out the head, rebuilding part of the side walls, and increased cost of labor and materials.

H. R. STANFORD.

[Second indorsement.]

NAVY DEPARTMENT, December 29, 1913.

To: Bureau of Yards and Docks.

Subject: Relative to cost of dry docks at Philadelphia and Norfolk.

1. The department understands from the figures submitted that the following deductions should be made from the cost of the dry dock at Norfolk had it been built in the same manner as that at Philadelphia:

Substitute cement for granite lining.....	\$230,000
Increased cost due to enlargement.....	278,966

Total to be deducted.....	508,966
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Verification of this understanding is requested.

2. It has been stated that there is economy in building a dry dock at Philadelphia due to the use of sand and gravel excavated in making concrete. The department desires information as to the amount in cubic yards the material excavated was used in the concrete construction in building Dry Dock No. 2 at Philadelphia, and the amount of the consequent saving in money.

JOSEPHUS DANIELS.

[Third indorsement.]

JANUARY 9, 1914.

From: Bureau of Yards and Docks.

To: Navy Department (material).

Subject: Relative cost of Dry Dock No. 2 at Philadelphia, and Dry Dock No. 3 at Norfolk.

1. The department's understanding is correct, that is, that if the dry dock at Norfolk had been built at one time and had been lined with cement finish instead of granite, in the same manner as the Philadelphia dry dock, its cost would have been approximately \$508,966 less than its actual cost.

2. With reference to the relative economy of building the dry dock at Philadelphia, as compared with the construction at Norfolk, owing to the use of sand and gravel excavated, attention is invited to the hearing of the chief of bureau December 15, 1913, pages 163 and 164. in which it is stated that the use of sand and gravel at Philadelphia from the dry dock excavation would probably reduce the cost of the dock \$150,000 to \$200,000 as compared with the construction of the dock at Norfolk. In this connection reference is also made to statements in hearing, page 182. A copy of hearing is attached.

3. From the records available, sand and gravel used by the contractor in the construction of Dry Dock No. 2 at Philadelphia approximated the following:

Gravel, 6,000 yards.

Sand, 39,000 yards.

The approximate value of the material is estimated at \$20,000.

H. R. STANFORD.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., January 12, 1914.

MEMORANDUM TO CAPT. WINTERHALTER.

The following additional data relative to cost of sand and gravel at the navy yards, Norfolk and Philadelphia, is submitted in accordance with telephone request:

Contracts have recently been awarded to the Norfolk Sand & Gravel Corporation and S. E. Morris & Co. for the delivery of sand and gravel f. o. b. barge at the Norfolk yard, at the rate of 84.5 cents for sand and \$1.344 for gravel.

2. The schedule of prices under which Pier 5 has recently been completed at the Philadelphia Navy Yard by the Riverside Contracting Co. allows payment at the rate of 70 cents per cubic yard for sand and \$1.50 per cubic yard for gravel.

3. Referring to the statement contained in the bureau's indorsement of January 9, 1914, to the department (material) relative to the value of sand and gravel obtained from the excavation, which was used in the construction of Dry Dock No. 2 at the Philadelphia Navy Yard, it may be further noted for the department's information that the contract for the construction of that dock provided that the contractor could use sand and gravel which he obtained from the excavation of the work for making concrete. Notwithstanding this provision, it would appear from the records on file in the bureau that the contractor proceeded to purchase gravel from supply dealers. A board of officers convened in this connection found that 5,760 cubic yards of gravel had been recovered from the excavation which was suitable for use in making concrete, and there was deducted, in accordance with this board's report, this amount of material, at 49.5 cents per cubic yard, amounting to \$2,851.20. The schedule of prices providing for monthly payments on account of the dry-dock contract contains provisions that the amount of 44 cents per cubic yard would be paid to the contractor for each cubic yard of sand required in the work in excess of that which could be obtained from the excavation. Sufficient sand, amounting, according to the bureau's estimate, to 39,000 cubic yards, was obtained from the excavation, which, at 44 cents per cubic yard, would amount to \$17,160, which may be considered the saving in the case of the dry dock as result of using sand from the excavation, as compared with having to purchase it. The amounts of \$17,160 and \$2,851.20 aggregate \$20,011.20, which are exact figures, as compared with the approximate figures as given in the bureau's indorsement.

4. On page 163 of the hearings the chief of bureau stated that the sand and gravel obtained in excavation for the dry dock at Philadelphia "would probably not reduce the cost of the dock much more than \$150,000 or \$200,000, as compared with the construction of a dock at Norfolk." This difference is equivalent to assuming that the

construction of a 1,000-foot dry dock would require 110,000 cubic yards of gravel and 55,000 cubic yards of sand. These materials, if purchased at the unit prices as given above, recently contracted for at Norfolk, would amount to \$194,315, whereas the same materials obtained from the excavation at Philadelphia would be in the nature of by-products which would necessarily have to be removed, and could therefore be utilized in making concrete without cost on account of the material.

H. R. STANFORD.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., January 15, 1914.

Navy Department (material).

Subject: Comparative data in regard to excavating dry docks at Philadelphia and Norfolk.

Reference: Department's letter 6132-102 of January 13, 1914.

1. At Philadelphia a sand and gravel stratum underlies the navy yard at a depth of about 20 feet below mean low water. The sand and gravel is not found in distinct layers, but mixed together, and in some cases mixed with earth and clay to such an extent that the material is not suitable for concrete work. It is therefore impracticable to state how much sand and gravel suitable for concrete work can be recovered from the excavation for a dry dock, but from past experience with Dock No. 2, it can be reasonably expected that sufficient and suitable sand can be so obtained. Whether sufficient gravel can be recovered from the excavation can only be determined when the site is uncovered.

2. At the navy yard, Norfolk, borings taken in the vicinity of the probable location of the proposed dry dock indicate that sand and gravel suitable for concrete work will not be encountered in the excavation.

3. It is estimated that for a 1,000-foot dry dock there will be required 55,000 cubic yards of sand and 100,000 cubic yards of gravel or broken stone. From information secured by telephone from Latta & Armstrong, of Philadelphia, sand delivered at the navy yard, Philadelphia, can be purchased for \$0.80 per cubic yard, and gravel for \$0.60 per cubic yard, to which should be added \$0.10 a cubic yard for unloading. From information secured by telephone from Sanford & Brooks, of Baltimore, sand delivered at Norfolk will cost \$0.60 per cubic yard, gravel \$0.975 per cubic yard, to which should be added \$0.10 a cubic yard for unloading.

4. Using these prices, the estimate is as follows:

Philadelphia:

55,000 cubic yards sand, at \$0.90.....	\$49,500
110,000 cubic yards gravel, at \$0.70.....	77,000
	<hr/> 126,500 <hr/>

Norfolk:

55,000 cubic yards sand, at \$0.70.....	38,500
110,000 cubic yards gravel, at \$1.075.....	118,250
	<hr/> 156,750 <hr/>

5. Under recent contracts for delivery of relatively small quantities of sand and gravel f. o. b. wharf, navy yard, Norfolk, sand is being obtained at \$0.845 per cubic yard, and gravel at \$1.344 per cubic yard.

6. It is not improbable that at least one-half of the required amount of gravel, and possibly the entire amount, can be recovered incident to the excavation for the construction of the Philadelphia Dock. It should be noted in this connection, however, that gravel so recovered would involve considerable expenditure for screening, storing, and handling, and that similar expenditures would be required in connection with any sand which might be recovered from the excavation. These expenditures can not be estimated with accuracy, involving as they do factors depending upon the quantity of foreign matter which is found with the sand and gravel and the character of the apparatus which the contractor may elect to use in the prosecution of his work. It may be roughly estimated that these expenditures will amount to from 15 to 30 cents per cubic yard of the material handled.

H. R. STANFORD.

DEPARTMENT OF THE NAVY,
BUREAU OF YARDS AND DOCKS,
Washington, D. C., January 22, 1914

From: Bureau of Yards and Docks.

To: Navy Department (material).

Subject: Estimated cost of proposed Dry Dock No. 4, navy yard, Norfolk, Va.

1. The annual estimates which have been submitted by the Navy Department for the fiscal year 1915 include an item of \$3,000,000 for dry dock at Norfolk. At the time this estimate was submitted there was no definite location determined for the dock. The proposed dock will undoubtedly be located on the Schmoele tract, and in view of the large extent of this tract and the many different schemes for its development which are possible of execution, it was impracticable to make any close probable estimate of the cost of the dock without first determining a definite location. The amount of \$3,000,000 was therefore tentatively assumed as being sufficient to cover the cost of the dock, including all probable contingencies, in case a location should be chosen which would involve most expensive construction costs.

2. A general scheme for the development of the Schmoele tract has been receiving the attention of the Board of Inspection for Shore Stations for some time, but as yet no definite plan has been submitted by that board.

3. The estimate of \$3,000,000 for the proposed dock, which is now before the Congress, is, as stated above, considered the maximum which would be required for the dock. It now seems desirable, in order that the department may have all possible information upon the subject, that the bureau submit for its consideration an estimate of the probable cost of the work in case a favorable location should be selected for the dock. The bureau has, therefore, after giving much careful attention to the subject, assumed a location for the dock as indicated in red on the attached lithograph plan of the yard and has prepared an estimate based upon its construction at that site. The results of borings which have been made do not give accurate information regarding the subsoil conditions on this site, but based upon data which was obtainable, together with the experience in the construction of Dry Dock No. 3 in the near vicinity, it seems probable that conditions upon the proposed site will be found most favorable. In order that the estimate which is submitted below may prove sufficient, the bureau has assumed, for the time being, that piling may be required for the support of the dock, but it seems very probable that piles will not be found necessary, in which case the probable cost of the dock will be reduced by \$150,000 as compared with the estimate below.

4. In preparing estimate the bureau has assumed not only the location as indicated in red upon the attached plan, but has also assumed general specifications for the proposed dock as follows:

Length sufficient to receive a vessel having length of 1,000 feet.

Width sufficient to receive a vessel having beam of 110 feet.

Depth sufficient to receive a vessel drawing 40 feet at mean high tide.

Pumping equipment will include a connection to pump well for Dry Dock No. 3 in order that the two pumps now installed may be utilized for pumping out the new dock. Two additional large pumps will also be provided as part of the new dock, with connections arranged in such manner that the new pumps can also be used for pumping out Dry Dock No. 3.

Location of new dock will be south of Dry Dock No. 3, with the axis of the new dock arranged with reference to the present channel of the Elizabeth River in such manner as to provide a width of channel exceeding 1,500 feet measured on the axis of the dock extended.

The proposed dock will be constructed with concrete side walls without granite lining. Concrete used in this manner has been found quite satisfactory in other docks and there will be a large saving in first cost of the work if granite lining is omitted.

The proposed plan and estimate for the new dock includes the amount of \$100,000 to provide the extension of tracks, paving, and power-plant distributing systems which will be necessary for the service of the dock and for the construction of about 350 linear feet of sea wall located between Dry Dock No. 3 and the proposed new dock.

Track for dock crane will be constructed surrounding the new dock which will include a short connection with the track now serving Dry Dock No. 3. This arrangement is possible because of the convenient location proposed for the new dock with relation to Dry Dock No. 3, and will permit of utilizing the existing crane for the service of the new dock.

The proposed dock will be within the comparatively short distance of 600 feet of the existing machine shop. Present shop facilities can therefore be advantageously utilized in connection with repair work upon vessels in the proposed dock without requiring the construction of new buildings.

5. Upon the basis outlined above it is estimated that the dock can be constructed for \$2,350,000. This estimate includes provision for tracks, paving, service systems, and sea wall as described, also provision for piling foundation, and 10 per cent for contingencies.

H. R. STANFORD.

Mr. LEE. No; I will ask you to answer the questions while the members of the committee are present, because it is very important. The committee will have to vote on it. When Admiral Stanford appeared before the Naval Committee he stated that the cost of a dry dock 1,700 feet long connecting the Delaware River with the back basin would cost \$3,000,000. In view of the fact that there are no objections as to the depth of the Delaware River and that the Philadelphia Navy Yard is to be the reserve basin and the Secretary of the Navy is very anxious to economize, in your judgment, Mr. Secretary, do you not think it would be well for the department to build two dry docks for practically the same cost as you can build one a thousand feet long at Norfolk?

Secretary DANIELS. We do not have any need for a 1,700-foot dry dock.

Mr. LEE. It is not a question of the dry dock being 1,700 feet long; it is a matter of building two dry docks for the cost of one and affording a better outlet to a great reserve basin, the only one you have on the Atlantic coast, at Philadelphia. I understand that it is the policy of the department to complete the battleship program of 48 ships and use the Philadelphia reserve basin as a home for the fleet. The present channel to the back basin is 250 feet wide. Don't you think it would be well, under the condition of affairs at the Philadelphia Navy Yard, instead of fooling with this treacherous back channel to the back basin, and in view of the fact that the Navy Department want dry docks, to build two dry docks in one for practically the same money it would cost to build one dry dock at Norfolk, where we have a dry dock large enough now to take the largest ship built or building?

Secretary DANIELS. It would take 10 years for you to get 35 feet of water at Philadelphia. We need the dry dock at Norfolk. We need it farther south than Philadelphia. When you have your 48-ship program carried out, then you will have more dry docks and there will be one at Philadelphia. Now the thing is that we shall have it where the ships rendezvous.

Mr. LEE. Now let me ask you this question: You have stated we have only a certain number of feet of water at Philadelphia. Then your objection is because the Delaware River is not deep enough?

Secretary DANIELS. No; I told you I was advocating Norfolk because that is the place where a dry dock is most needed; just like advocating Hunters Point at San Francisco.

Mr. LEE. But you have just stated we don't have the water at Philadelphia. Do you have any battleship built or building that can not come to Philadelphia, up the Delaware River?

Secretary DANIELS. There is no use to come up the river unless you can get into the dry dock.

Mr. LEE. I understand. That is the reason we are asking to build this proposed dry dock for \$3,000,000. They can build this 1,700-foot dry dock at Philadelphia for \$3,000,000, which will give us two dry docks in one.

Secretary DANIELS. Then you have to take all the ships up the Delaware River, and I think it is much better to have it at Norfolk.

Mr. LEE. How long would it take a ship to come from Norfolk to Philadelphia?

Capt. WINTERHALTER. About 24 hours.

Mr. LEE. How fast would that ship be going, Captain, to do that?

Capt. WINTERHALTER. I suppose about 10 or 11 knots; I do not know exactly. I answer offhand, 24 hours.

Mr. LEE. The *Mayflower* makes about 12 knots, I understand. If I can remember correctly the *Mayflower* left Norfolk about 10 or 11 o'clock in the morning and arrived at Philadelphia the next morning about 5.30 or 6 o'clock?

Capt. WINTERHALTER. How many hours would that be, Mr. Lee? I did not quite follow your figures. Twenty-four hours would be about right. I was thinking of a battleship waiting on the tide.

Mr. LEE. Making about 11 knots it would be about 18 hours. Suppose a battleship coming to the Norfolk Navy Yard at 4 o'clock in the afternoon, would it not be just as easy to run that battleship over to Philadelphia as to have it lay over there until the next morning before they could dock it?

Capt. WINTERHALTER. Of course there may be several ways in which the department may be run, Mr. Lee. I do not know—

Mr. LEE. I am not trying to run the department; I am simply asking you a question.

Capt. WINTERHALTER. I know that, but your questions do not admit of an answer "yes" or "no."

Mr. LEE. I asked a lot of questions of Admiral Stanford when he was before the committee.

Capt. WINTERHALTER. I know that, and that is why I want to know where you get that estimate of \$3,000,000, Mr. Lee. I do not find it here.

Mr. LEE. I have the same estimate as you have from Admiral Stanford. Admiral Stanford appeared before the committee, and on page 151 (I read from the hearings of 1913) is the following:

Mr. LEE. Do you think that it would be possible to build this 1,700-foot dry dock for \$3,000,000?

Admiral STANFORD. Yes, sir.

Capt. WINTERHALTER. That I do not know. I looked for it in the hearings, but I did not find it.

Mr. LEE. I would like to read this to you. On page 151 of the hearings of 1913 Admiral Stanford said:

In view of the actual experience in the construction of the present dock. The cost of the present dock included the construction of a central power plant and a large part of the power-plant equipment. It also involved the cancellation of a contract with the additional cost and the loss incident to such a procedure. The construction work covered many things which undoubtedly added to the cost of the work.

Mr. LEE. Can you give me the cost of the present dry dock at League Island?

Capt. WINTERHALTER. Yes; I would like to give you that, but I would like to give you, also, the cost of a similar dock of almost the same dimensions at Norfolk, and then would like to reduce the cost of the Norfolk dock to the Philadelphia dock. Congress lengthened that dock after it was completed, so the whole head and part of the side walls had to be taken out and lengthened. That necessitated an additional cost. Then, in the place of it being cement lined at Norfolk, as at Philadelphia, it was granite lined, and altogether this

makes quite a difference, and if that dock can be built at Philadelphia for \$3,000,000—

Mr. LEE. You say it can not be built?

Capt. WINTERHALTER. I say I do not understand how it can be built for \$3,000,000. The cost of construction is about \$2,000 per linear foot, and that was the cost of the last dock at League Island.

Mr. LEE. I would be glad to give you some figures.

Capt. WINTERHALTER. Yes. The total cost of the two docks is not directly comparable, referring to Philadelphia and Norfolk, and they were built under different conditions. The dock at Norfolk is lined with granite, which made it cost about \$230,000 more than would have been the case had it been built of cement in the same manner as at Philadelphia. Also, the Norfolk dock was lengthened about 180 feet after completion, at an added cost of \$278,965.93 for the removal of the end and side walls preliminary to lengthening. A comparison of the cost of the two docks may therefore be made as follows: Actual cost of Philadelphia dock, \$1,471,550.67.

That is the cost I think you referred to, Mr. Lee?

Mr. LEE. \$1,471,550.67; that is right.

Capt. WINTERHALTER. The actual cost of the Norfolk dock, Mr. Lee—

Mr. LEE. That is the actual cost of the dock?

Capt. WINTERHALTER. That is the actual cost; yes.

Mr. LEE. Now, there are no "ifs" and "ands" to put in the cost of anything—if we did this or did that. I want to know what is the actual figures.

Capt. WINTERHALTER. That is what I am getting at. The actual cost of the dock—

The CHAIRMAN. Tell how that cost was occasioned.

Capt. WINTERHALTER. The actual cost of the dock—

Mr. WITHERSPOON. And how much less it would have cost if the dock, as it has now been constructed, had been constructed first instead of being enlarged.

Capt. WINTERHALTER. Yes; that is what I am trying to give. The actual cost of the dock, as it stands now, in Norfolk, is \$1,728,965.93. If the dock had been constructed from the beginning as it is now, allowing for removing the head, it would have cost \$278,965.93 less. If it had been cement lined, as is the case with the Philadelphia dock, instead of a granite lining, it would have been \$230,000 less.

Now, that is not made for any invidious comparison with Philadelphia. It is simply my desire to find out what the docks cost, relatively, in Philadelphia and Norfolk, and it showed that the estimated cost of the Norfolk dock, if constructed without any interruption and without granite lining was \$1,220,000 as compared with the Philadelphia dock at a cost of \$1,471,550.67.

Mr. LEE. I read from the hearings of 1913. I would like to have you state what would be the cost of the power plant, and the machinery, and the cancellation of the contract at the Philadelphia Navy Yard for that dry dock?

Capt. WINTERHALTER. That I would not know.

Mr. LEE. I will give you some figures, Captain. The cost of the present dry dock at Norfolk—

Mr. WITHERSPOON. Mr. Lee, will you let me ask one question that I may understand the answer?

Mr. LEE. Yes.

Mr. WITHERSPOON. What contract do you refer to?

Mr. LEE. The dry dock at Philadelphia.

Mr. WITHERSPOON. What contract do you refer to?

Mr. LEE. The cancellation of the contract at the time of the building of the present dock.

Mr. WITHERSPOON. What has the old dock got to do with this? We have never made any contract with reference to this, have we?

Mr. LEE. No; but I am trying to show the difference between building a dry dock at Norfolk a thousand feet long and one 1,700 feet long at the League Island Navy Yard, and showing that the conditions at the League Island Navy Yard would give the department better opportunities to economize and to build two dry docks for the same price we can build one for at Norfolk.

Mr. WITHERSPOON. I understand that, but it is that contract that mystifies me.

Mr. LEE. It is the contract on the old dry dock at the Philadelphia Navy Yard we are talking about.

Captain, the actual cost of the Norfolk dry dock, as you said, was \$1,728,965.93?

Capt. WINTERHALTER. Yes.

Mr. LEE. The actual cost of the dry dock at the Philadelphia Navy Yard and at Norfolk, which is practically the same length and I believe a few feet difference in width, was \$1,478,550.67, including a power plant, machinery, and the cancellation of the first contract. I have some figures here given to me by experts. They show that a power plant would practically cost about \$250,000, to say nothing about the cancellation of the contract or the equipment. That would bring the cost of the Philadelphia dry dock down to \$1,221,550.67, or a saving over Norfolk of \$507,475.26, so that when you take the actual costs of the dry docks and put the figures side by side they are altogether different.

Capt. WINTERHALTER. I would like to examine whether the Norfolk dry dock included anything for power plant.

Mr. LEE. It did not include anything for the power house. I have it right here. I have the cost of the dry dock at Norfolk right here.

Capt. WINTERHALTER. Oh, yes; but I do not know whether in the case of the Norfolk dry dock it included the cost of the power house to offset this. The trouble with all these figures is there is a great deal of addition and subtraction.

Mr. LEE. Yes. You stated a few moments ago that you questioned the cost of the dock at League Island—that it could be built for \$3,000,000?

Capt. WINTERHALTER. Not exactly. I asked where you got your information, or where Mr. Stanford had said it. You then read it to me out of the previous proceedings, which I had forgotten.

Mr. LEE. You will admit if we can build a dry dock in Philadelphia for \$1,220,000, 744 feet long, that where the contractors could work from both ends of the dry dock they could build a 1,700 foot dry dock for \$3,000,000?

Capt. WINTERHALTER. I do not know whether I would admit that or not, if I had my own money to put into it.

Mr. LEE. I would like for you to answer the question as an expert whether you think a contractor, who builds a dry dock 744 feet long

for \$1,220,000, could build one at the same place and under practically the same conditions and surroundings and could work from both ends of the dry dock—whether he could build one 1,700 feet long for probably \$3,000,000?

The CHAIRMAN. Would it be of the same width and depth?

Mr. LEE. Just a few feet wider, Mr. Padgett.

Capt. WINTERHALTER. Of course, Mr. Lee, I appreciate what you say, but it seems to me we ought to approach the whole thing from a different standpoint. I can not answer these questions "yes" or "no."

Mr. LEE. I would like you to answer whether you think, in your own mind, a contractor could not do what I said, as you have seen the figures, at Philadelphia—whether you think it would be possible for a contractor working from both ends of the dry dock to build it for \$3,000,000, if he could build one 744 feet long for \$1,220,000?

Capt. WINTERHALTER. The answer, Mr. Lee, granting all your premises, is "Yes; undoubtedly he could." Of course I can not examine into those premises in a minute; but granting your premises, I should say yes.

Mr. LEE. You stated that the Elizabeth River at the point that the dry dock is suggested here is 1,500 feet wide. The chart from the Navy Department shows that the Elizabeth River Channel is only 400 feet wide.

Capt. WINTERHALTER. Of course, I did not make exactly that statement. I said the distance between the pierhead lines as established was 900 feet, but that at the angle at which the dry dock would be placed to the channel the distance then in the length of the axis would not be 1,500 feet—I said it would be over 1,500 feet on this picture. Now, if you had a chart here, the latest Coast and Geodetic Survey chart, that would show you exactly the width of the channel.

Mr. LEE. I have the latest chart here. I would be glad to have you look at it.

Capt. WINTERHALTER. That is the Navy Department map. That is not a chart; it is a plan. I am speaking of the actual chart by which we navigate that river to get into the dry dock and get back to Hampton Roads.

Mr. LEE. You do not mean to say the navy yard or Navy Department is using a chart that is not correct?

Capt. WINTERHALTER. We differ on what is a chart. This is not a chart.

Mr. LEE. We will call it a map.

Capt. WINTERHALTER. A chart is a navigational instrument.

Mr. LEE. We will call it a map made by the department.

Capt. WINTERHALTER. Yes; but it does not necessarily show the channel. I would agree with you at once if I could, but that is not the channel. It shows the course for small launches. That does not mean anything at all. On the Coast Survey chart you will find this channel has scarcely any bend in it, as it has been dredged out lately up to the bridge.

Mr. LEE. I did not question the depth of the channel nor the width. I have taken that up for the purpose of examining whoever the secretary brought with him, with regard to the width of the river. I present an official map of the Navy Department giving the exact width and depth of the Elizabeth River and if the chairman

will permit I will send for a map that I have in my office, the latest from the Hydrographer's Office, showing the exact depth and width of the Elizabeth River, if you question this map.

Capt. WINTERHALTER. That is the thing to talk about if you are getting down to bottom facts. That is the chart which shows the actual dredged channel.

Mr. ROBERTS. Do I understand Capt. Winterhalter to say that he would not be warranted in following the data on that map which has been presented to us as an official map from the Navy Department?

Capt. WINTERHALTER. Not at all; but that is a blue print, and is not a plan of the navigable channel. It is authentic; and is prepared in the Norfolk Navy Yard by the civil engineer. I am speaking of navigating by a chart for ships. I could not navigate the Elizabeth River by this at all.

Mr. ROBERTS. But when they send us a plan of any navy yard showing the adjacent water, width and depth, are not we justified in following that plan?

Capt. WINTERHALTER. Yes; but this does not show the depth.

Mr. ROBERTS. But I understood Mr. Lee to say it did.

Capt. WINTERHALTER. There are no figures of depth on it.

Mr. LEE. There is not any question as to the depth of the river between you and I, Capt. Winterhalter.

Capt. WINTERHALTER. I am speaking to Mr. Roberts and answering his question. He spoke about the depth of the water. There are no figures on this blue print showing the depth of the water. The depth of the Norfolk channel is 35 feet.

Mr. ROBERTS. I misunderstood you.

Capt. WINTERHALTER. I simply make that distinction—if we are going to speak about the channel, this is not the authentic document to show the channel.

Mr. GERRY. This blue print is simply intended to show the various buildings in the navy yard?

Mr. LEE. If you will notice, the various widths are shown on the map.

The CHAIRMAN. Gentlemen, I think we can proceed. I do not think there is any controversy about a 400-foot channel and a 35-foot depth.

Capt. WINTERHALTER. No.

Mr. LEE. Captain, I would like to ask you a question in regard to the borings on the Schmoele tract. You say you have had several tests; what did those tests show?

Capt. WINTERHALTER. I have not examined them, Mr. Lee, but there is a report we can put in the hearings of the character of the borings already made and the others can be put in as fast as they come in.

The CHAIRMAN. Just put in the hearings what borings there are.

Mr. LEE. Just one minute. I tried to get those borings from the department, and I have not been able to.

Capt. WINTERHALTER. I would like to look that up. I do not know why you were not furnished with that information.

The report on the borings already taken is in the form of a pictorial diagram showing in different colors the various strata passed through. This diagram is not suitable for reproduction in the hearings.

The three borings nearest the proposed site show nothing to indicate that there will be unusual difficulties in the construction of a dry dock at this point. The fact that there has been constructed Dry Dock No. 3 immediately adjoining the proposed site is the best indication that a dry dock can be successfully constructed in this locality.

Mr. LEE. I have not been furnished with it. I have a map here furnished by the Geological Survey. I wish to call the attention of the committee and Capt. Winterhalter that the stratum at that particular point is not as good as it might be and that the Schmoele tract is a very swampy place, which the committee knows. They saw the tract. I think in view of the fact of the trouble we have had at Pearl Harbor that we should go slow before we appropriate money for the purpose of putting a dry dock in a position where we do not know what kind of a bottom we are going to get. It seems to me that the dry dock you have marked in red pencil on the small map you have brought with you would cost a great deal more money than is estimated, for the simple reason that you would be compelled to dig out on the Schmoele tract, which is very swampy, and you would have to cofferdam practically more than three-quarters of the present new dry dock, which would be a very large cost.

Capt. WINTERHALTER. No; I hardly think so, but still those are all considerations that will govern the final location of the dry dock, or its angle with the river. It might be advisable to swing that angle in a little more or out a little more. Of course, those are details nobody would go into until he got all possible information. Pearl Harbor is unique and bears no relation whatever to the Schmoele tract. In fact, the location of this dock is selected with as little reference as possible to the Schmoele tract. No. 4 dock is going to be as close to No. 3 as possible, so that similar conditions may govern. In fact, with regard to the buildings of the yard, we want to place the dock and all pumping equipment so that there will be the least difference as far as the machine shop is concerned, between No. 3 dock and No. 4 dock.

Mr. LEE. In case the department should change the location of the proposed dock and adopt the Doyle plan, which I suppose you are familiar with or have seen.

Capt. WINTERHALTER. I have seen it. I have not studied it. It is imaginative, and as far as the Doyle plan is concerned and other plans, I suppose nearly everybody has tried his hand at developing the Schmoele tract. But this is not a question of the Schmoele tract at present, as I understand it; it is a question of where we need the next big dry dock that shall be at least the size of the Panama Canal locks.

Mr. LEE. Then the chart you have here is not where you are going to put the dry dock? It is only a suggestion.

Capt. WINTERHALTER. It is the last recommendation. It is the recommendation from the Bureau of Yards and Docks, made to the Secretary, which he has not yet acted upon; that is, he has not given this his definite approval.

Mr. LEE. You spoke some time ago about the depth of the Delaware River. Can you tell me what percentage of the Delaware River is dredged to a depth of 35 feet?

Capt. WINTERHALTER. I did know, but I do not believe I have it with me.

Mr. LEE. I have the Hydrographic Bulletin here, and I would like to have you look at it.

Capt. WINTERHALTER. That is authentic.

Mr. LEE. I would be glad to have those depths inserted in the hearings.

Capt. WINTERHALTER. This does not show that any part is dredged to a depth of 35 feet, does it, Mr. Lee?

Mr. LEE. No.

Capt. WINTERHALTER. This is 30 feet. That is, there are only a few places—

Mr. LEE. I would be glad to have you call it off just from the beginning of the river down to the sea.

Capt. WINTERHALTER. Yes; this is the least depth at mean low water on the range: Upper Horseshoe, 32.4 feet; Lower Horseshoe, 33.7 feet; Mifflin, 30 feet; Tinicum, 31.4 feet; Schooner Ledge, 30 feet; Bellevue, 30.4; Cherry Island, 30 feet; Deep Water Point, 30.5; New Castle, 32.2 feet; Reedy Island, 32.3 feet; Baker, 32.3 feet, and Liston, 30.2 feet.

Mr. LEE. What is the width? Does it give the width?

Capt. WINTERHALTER. No; it does not give the width.

Mr. LEE. Were you one of the aids under Secretary Meyer?

Capt. WINTERHALTER. Yes.

Mr. LEE. I would be glad to have you read this letter of the Secretary, to the Committee.

Capt. WINTERHALTER. Do you want this read aloud?

Mr. LEE. Yes; so that the committee can hear it.

Capt. WINTERHALTER (reading):

FEBRUARY 3, 1913.

MY DEAR CONGRESSMAN: Replying further to your letter of the 28th ultimo, requesting certain information relative to dry docks at the navy yard, Philadelphia, the following is respectfully submitted:

It is estimated that the cost of making surveys, borings, etc., and preparing plans for a dry dock 1,700 feet in length extending from the back basin of the Philadelphia Navy Yard to the Delaware River would be \$15,000. The estimated cost of such a dry dock of a minimum width at top of keel blocks of 110 feet, which is that of the locks of the Panama Canal, and a depth over the sill at mean high water of 40 feet, is \$3,000,000. The depth of the locks at Panama is 40 feet at low water, but all naval dry docks have been designed on high-water basis, since the occasions when a ship could not wait for the tide are so rare as not to justify the increased cost of a deeper dock. The water in the lock is of course lowered to low-water line when the ship is inside.

The estimated cost of extending Dry Dock No. 2 at the Philadelphia Navy Yard to the fresh-water basin, using the same width as proposed for the new dry dock, reconstructing the present dry dock entrance, and widening the body so as to give the same width, is \$2,800,000. The depth of water over the sill of the present dock is 30 feet at mean high water, and it is impracticable to increase this materially or the depth over the floor of the present dock.

Faithfully, yours,

G. V. L. MEYER.

Mr. LEE. Sometime ago when Admiral Stanford appeared before the committee he was handed a list of questions to answer with regard to the Norfolk dry dock, and I would like to ask you as one of the aids to the Secretary of the Navy, what is Capt. Grant's ability as a navigator?

Capt. WINTERHALTER. Excellent.

Mr. LEE. Would you consider Capt. Grant an expert as a navigator and as to the location of dry docks?

Capt. WINTERHALTER. That is too comprehensive, Mr. Lee. One at a time. As a navigator, yes.

Mr. LEE. What would be his judgment in regard to the Philadelphia Navy Yard being a proper place to locate a dry dock or Norfolk? Would his judgment be worth anything?

Capt. WINTERHALTER. Let me ask you a question.

Mr. LEE. I would be glad to have your answer.

Capt. WINTERHALTER. Stationed at the Philadelphia yard or elsewhere?

Mr. LEE. Oh, no, elsewhere.

Capt. WINTERHALTER. I do not know whether he has changed his views or not. It makes a great deal of difference where you are stationed.

When I was at the Philadelphia Navy Yard, Mr. Lee, I thought Philadelphia was the biggest proposition on the face of the earth—when I was stationed there. Years afterwards, on coming to Washington, I tried to put things in a proper proportion, and it seems to me I put Philadelphia afterwards in the proper position on the map, and some of the things that seemed to me of more importance when I was at Philadelphia then dropped in size.

Mr. LEE. Excuse me, but Capt. Grant was stationed at the Norfolk Navy Yard also, was he not?

Capt. WINTERHALTER. Not that I know of. I do not know whether he was or not.

Mr. LEE. How about that, Mr. Theall?

The CLERK. In 1885 and 1886 he was stationed there.

Capt. WINTERHALTER. I did not remember.

Mr. LEE. Then Capt. Grant would have some judgment as to both navy yards, having been located at both places?

Capt. WINTERHALTER. Yes.

Mr. LEE. His judgment as a navigator, in view of the fact that he is now in command of the largest or one of the largest battleships afloat—would you say that he knew something of what he was talking about? I will ask the clerk of the committee to read Capt. Grant's description of the navy yard at Norfolk and Philadelphia.

Capt. WINTERHALTER. I think that is already in the record, is it not?

Mr. LEE. This is something new.

The CHAIRMAN. Can not that be inserted?

Mr. LEE. I would like to have it read. It is very important, and I would like the committee to hear it.

The CLERK (reading):

CAPT. GRANT DEFENDS NAVY YARD AGAINST NORFOLK'S ATTACK.

Points in Norfolk's attack.—The portion of the Norfolk petition relating to the Philadelphia yard prefaces that document and, in its entirety, is as follows:

To the Congress of the United States:

A résumé of the comparative merits of the League Island and of the Norfolk Navy Yards may assist the congressional minds to act on Secretary von Meyer's recommendation for an Atlantic coast dry dock of 1,000 foot dimensions—those two yards now being the rivals for its location.

The League Island Navy Yard at Philadelphia is a fresh-water station, suitable for reserve ships only, having a tortuous channel of 28-foot depth, 88 miles from the sea, subject to shifting bottoms and constant freezing up.

As a repair and fitting-out base it is lacking in every essential feature, and its adoption as the site of the new dry dock would necessitate an immense appropriation to give that uncertain channel a uniform depth of 35 feet.

For at least three months, on an average, every year, climatic conditions are so severe as to impede, and often to prevent, out-door work, thus increasing costs and entailing delays.

The fortifications at the Delaware Breakwater can not be compared to Fortress Monroe, the second defense line of Hampton Roads.

The rail transportation is not superior to that of Norfolk, while Philadelphia can not be compared with the steamship facilities of the Virginia ports.

As a naval base, in time of war, it can not be considered at all, for reasons which are apparent to every naval expert of dispassionate judgment.

Commandant Grant's answer.—The commandant is of the opinion that the petition, while nominally from the business organization, is really the work of one man.

The formal statement of Commandant Grant upon this portion of the petition follows:

"There has recently been appropriated \$570,000 for the enlargement of the dry dock at Norfolk. This yard has a dock capable of docking vessels larger than any that has yet been appropriated for, as has also the navy yard, New York.

"The necessity for another dock at the navy yard, Norfolk, is not apparent. The capacity of the Philadelphia Navy Yard for vessels of the war fleet exceeds that of all other yards. The back basin is capable of berthing 20 or 30 battleships, and the necessity of another opening or outlet to that basin—one of known width and depth—to eliminate the possibility of the vessels in reserve being bottled up by the sinking of a coal, mud, ore laden or other vessel in the Schuylkill River is too apparent. It is a necessity in our national defense.

"The recommendation made for a 1,700-foot dry dock contemplates the construction of a canal from the back basin to the Delaware River. Such canal to be provided with caissons at both entrances and at a midway point that will permit of dry docking vessels at either end, or in case of an unusually large vessel the middle caisson could be left out and any vessel, no matter what its length up to 1,700 feet and of 110 feet beam with a 35-foot draft over the entrance sill, could be placed in dry dock.

"The construction of such a 'canal and dry dock,' combined, will eliminate the danger from entrance via the Schuylkill River to the back basin.

"The cost of such construction is far lower than of any dock that has been or will be constructed elsewhere. It is only \$3,000,000 for a 1,700-foot dock of which only \$15,000 is asked at this time."

Criticism answered.—The entire statement covering Philadelphia is subject to remarks as follows:

"This yard (Philadelphia Navy Yard) is a fresh-water station, suitable for reserve ships only."

Answer: "Inasmuch as the Philadelphia Navy Yard has repaired for years all vessels of the Atlantic Fleet and has had in dry dock the largest battleships (*Arkansas* and *Wyoming*) the bare statements made in the pamphlet is not at all convincing."

"A tortuous channel."

"This is a plain misstatement of fact, due undoubtedly to the inborn ignorance of the author."

"Twenty-eight foot depth."

"See report of Army Engineer officer. We have 30 feet."

"Eighty-eight miles from sea."

"Another example of author's ignorance. We are only 83 miles from Overfalls Light Ship."

"Subject to shifting bottoms."

"Where does the author receive his information? Ask the Pilots Association if there are any shifting bottoms in the river. I have never heard of any myself and I am sure the words 'shifting bottoms' are used in a sense by the ignorant author indicating that the bottom of the river is not of uniform depth."

"Constant freezing up."

"This yard is subject to constant freezing up. 'The Press' recalls well, as do many people, when the Elizabeth River, leading from Hampton Roads to the navy yard, 12 miles distant, was frozen over and traffic in the port of Norfolk was practically suspended.

"There has never been a season or winter when traffic was not open on the Delaware to an extent equal to the southern Chesapeake.

"As a repair and fitting-out base it is lacking in every essential feature."

"This statement is devoid of common sense. I would ask the author to make a specific statement, but we know it would be impossible.

"And its adoption," etc., to the end of the sentence, etc., 'of 35 feet.'"

"If anyone can make sense in this sentence, please translate it. It includes an absolutely false statement. The conditions in Philadelphia differ little, if at all, from Norfolk, Va."

"The fortifications at the Delaware Breakwater can not be compared to Fortress Monroe, the second defense line of Hampton Roads."

"The author shows his ignorance of conditions. The Delaware is not fortified at the breakwater."

"The rail transportation is not superior to that of Norfolk, while Philadelphia can not be compared with the steamship facilities of the Virginia ports."

"This is absurd and untrue."

"As a naval base in time of war it can not be considered at all, for reasons which are apparent to every naval expert of dispassionate judgment."

"The statement by the author of this article, like previous ones, is made without knowledge of the subject under discussion. There is no navy yard on the Atlantic coast comparable with the Philadelphia Navy Yard for the repair of vessels of all descriptions in time of war. The inference drawn from the statement might lead a layman to believe that the Norfolk Navy Yard would be used as a base."

Arguments for Norfolk yard.—The commandant then proceeds to dissect Norfolk's claims as set forth in the petition. Excerpts from the petition are in double quotation marks.

"With a climate ever free from ice and disturbing storms, channel 35 feet deep to the ocean, 27 miles distant, soon to be made 1,000 feet wide, 14 miles from the rendezvous grounds in Hampton Roads, and 55 miles from the southern naval drill grounds, when estimated in connection with the following facts, it is the only logical location for the largest dry dock in America, eventually to become the leading naval station of the Nation."

"(a) There is scarcely a winter that the Elizabeth River, on which the Norfolk Navy Yard is situated, is not frozen over or filled with floating ice to an extent equal to the harbor of Philadelphia."

"(b) Norfolk has no such channel. On June 30, 1912, a channel of this depth from Hampton Roads to the navy yard, Norfolk, only a distance of 11 miles, with width of 400 feet only, was but 59 per cent completed, estimated cost being \$800,000. On June 30, 1912, Thimble Shoal, which is to be dredged to a depth of 33 feet, and of a width of 500 feet, for a distance of 5 miles, was 83 per cent completed, estimated cost being \$660,000.

"(c) Norfolk Navy Yard is 27 miles distant from Cape Henry Lighthouse, 32 miles to the lighted buoy, which compares with Over Falls lightship when reckoning distance from the Philadelphia Navy Yard."

"Every essential for a complete naval base centered here: Accessibility, defensibility, depth of water, protection from storms, food supply, labor markets, material markets and rail connection and climatic conditions."

"Each one of the eight essentials for a complete naval base claimed for the Norfolk Navy Yard may be equally claimed for the Philadelphia Navy Yard, but with greater emphasis. The Elizabeth River, opposite the navy yard, is so narrow that it is scarcely possible to turn or wind a vessel of 500 feet length in the river. At Philadelphia positions have been determined for locating moorings for anchoring 12 battleships 500 feet in length opposite the navy yard.

"The average length of pier from the navy yard, extending into the Delaware River at Philadelphia, is over 600 feet, and we have nearly a half-mile of water over 30 feet deep beyond that for the handling or maneuvering of vessels. The labor and material market, as well as rail connection at the navy yard, Philadelphia, exceeds that of any other navy yard in the United States.

"Instead of expensive distribution to New York, Boston, and Philadelphia—the home stations—all Federal ships could receive immediate repair at the Norfolk Navy Yard, if the same secured desired appropriation."

"By home stations the author refers to home yards for repairs of vessels of the active fleet. Money makes the mare go, the world over. If Congress will appropriate sufficient funds, the fleet could be repaired in Hudson Bay if desired.

"Rail systems having 42,000 miles of trackage, giving the most favorable of terminal rates of freight, connect Norfolk with all the natural supply depots—even concrete work is not interfered with in winter—labor has always been equal to the demands in this growing focus of railroad concentration, and hence all construction is cheaper than at any other yard."

"How absurd is this argument. Philadelphia may with equal propriety claim the trackage of the vast Pennsylvania Railroad system and of the Reading, Lehigh Valley, and Central Railroad of New Jersey.

"In time of war Hampton Roads would be the inevitable rendezvous of all the fleet on the Atlantic Coast, and yet the Norfolk Navy Yard, failing in appropriations to develop the 272 acres with ample water front, could only take care of six ships at one time, the balance awaiting their turn while riding at anchor."

"The author shows the Norfolk Navy Yard to be a small affair, to be able to take care of six ships only at one time. At Philadelphia this fall, previous to the naval review in New York, 22 ships in commission were berthed at the yard and left here for the rendezvous. More than one-third of the tonnage of all ships at that rendezvous had been safely berthed at the Philadelphia Navy Yard.

"The possibilities, at small cost, of adapting that area, acquired in 1904, to present the future needs are: A double end 1,000-foot modern dry dock, with intermediate gate, a caisson to permit of its use as two small dry docks when the larger dock is not desired, a coaling station for reserve supply of 200,000 tons to provide against strikes and other disturbing events, capable of loading at one time four colliers with 1,200 tons per hour, sea water and piers for 28 modern dreadnaughts berthing at once, besides many other essentials."

"The possibilities referred to above apply equally well to the navy yard at Philadelphia, with this difference, that the accomplishment of a 1,700-foot dry dock as Philadelphia, forming a channel of known width and depth from the back basin to the Delaware River, can be constructed for less money than a 1,000-foot dry dock at the navy yard, Norfolk.

"With a dry dock of the largest dimensions, capable of docking any vessels of the United States fleet to-day at Norfolk, why the necessity of a second dock? The largest dry dock at the navy yard at Philadelphia can not dock a vessel larger than the *Utah* class, and it is an imperative necessity that there should be a new dock provided immediately for the Philadelphia Navy Yard."

Mr. LEE. Those are the remarks of Capt. Grant, who is now in command of the *Texas*, in answer to a statement made by the Norfolk Board of Trade.

Capt. WINTERHALTER. Yes; the whole thing appeared in Congressman Vare's speech in the Congressional Record.

Mr. LEE. I wish to call your attention to the geological survey of Virginia. I wish you would just notice the stratum and I would like you to read that into the record.

Capt. WINTERHALTER. I do not think that this map—

Mr. LEE. That is the latest.

Capt. WINTERHALTER. I do not doubt that. I mean that this throws no light upon the problem of building a dry dock here. It is on a very small scale.

Mr. LEE. I wish you would read just what the stratum is there. I would like you to read that into the record.

Capt. WINTERHALTER. Excuse me, Mr. Lee, but I do not see how I can couple this up with any geological description of the Schmoee tract.

Mr. LEE. I want to show the stratum of that particular place.

The CHAIRMAN. Just read what it says there.

Capt. WINTERHALTER. With pleasure [reading]:

Pleistocene and recent deposits of sand, clay, peat, and gravel of variable thickness are found at the surface. They mantle the older deposits over wide areas in eastern Virginia but are not indicated.

Capt. WINTERHALTER. You want this section itself?

Mr. LEE. Yes.

Capt. WINTERHALTER (reading):

The following section passed through in sinking a well just to the east of Norfolk is typical of the normal development of the Talbot formation. Well section near Norfolk:

	Feet.
Fine white quartz sand.....	15
Blue clay.....	13
Sandy clay.....	34
Blue sand.....	8
Gravel with water-bearing horizon overlying shell marl.....	74

Total..... 50

Mr. LEE. It shows that they have not any particular stratum at that place.

Capt. WINTERHALTER. No. For any one place, of course, we have to rely on the borings.

Mr. LEE. I wish to call your attention now to the latest map from the Hydrographic Office, showing the width and depth of the Elizabeth River. You will notice the Elizabeth River comes up here and then cuts out and goes on down to Norfolk, and you will notice the width is 400 feet and depth 35 feet.

Capt. WINTERHALTER. A 35-foot channel finished in December, 1912.

Mr. LEE. I will ask you to point out at that particular point just where that river could be made 1,500 feet wide without a large expenditure. I would like to have you do so. I wish to call your attention to this point—I would like the secretary to see this, just to see where this dry dock is supposed to be located. This is the present large dock [indicating]; this is the navy yard here, you see [indicating]; this is the Schmoele tract here [indicating]. Now, the channel there is only 400 feet wide—that is the channel right here [indicating] running all the way around to Hampton Roads. If you can point out at any place there where that channel shows it is 1,500 feet wide, I would be very glad to have you do so.

The CHAIRMAN. Is it the river that is 400 feet wide or the channel?

Capt. WINTERHALTER. The dredged channel.

Mr. LEE. It seems to be very narrow at that particular point there [indicating on map]. I would be glad to have you look at that.

Capt. WINTERHALTER. Of course, this does not give the latest pier-head lines. The blue print does.

Mr. LEE. This is the latest map.

Capt. WINTERHALTER. It is the latest chart for navigational purposes.

Mr. LEE. You spoke of navigation and that is the reason why I sent for this map. Now, the map shows you the river is right up against the banks there and is 400 feet wide.

Capt. WINTERHALTER. Yes; that is right.

Mr. LEE. Then, there was nothing in the statement that it was 1,500 feet there?

Capt. WINTERHALTER. No; not right at present. We had an appropriation—and the chairman may be able to help me on that—for the purchase of that land.

The CHAIRMAN. Yes.

Mr. LEE. You are talking of the Schmoele tract now?

Capt. WINTERHALTER. No; I am talking of the banks of the river. All of the rivers of the world are deepened for shipping and widened as required.

Mr. LEE. I understand that. But you see, Mr. Secretary, in getting up the river with the large battleships, it seemed to me that the present dry dock would be easier to get into than the one that is proposed to be erected by the department.

Secretary DANIELS. Still, you can get out there when the experts say you can. I am not an expert.

Mr. LEE. That is the old dock. Now, don't you think it is easier to get into this old dock than it would be into a dock pointing up the river?

Secretary DANIELS. That looks so to a layman.

Mr. LEE. The battleship would have to come up and back into the proposed new dock or try to turn around in a 400-foot channel?

Capt. WINTERHALTER. It is not as bad as it looks.

Mr. ROBERTS. This map showing the proposed location of the dock in red, I presume is official?

Secretary DANIELS. It is the suggested location.

Mr. ROBERTS. I presume the map itself is official?

Capt. WINTERHALTER. Oh, yes.

Mr. ROBERTS. Now, this is the scale down here. Now, apply the scale to the map and it would seem that the distance from the old pierhead line opposite the dry dock to the wall of the navy yard is 600 feet. That is the width of the river, the old line.

Capt. WINTERHALTER. Yes.

Mr. ROBERTS. Now, taking the extreme width of the proposed new pierhead lines, coming into the angle where you get the extreme distance across, is 850 feet?

Capt. WINTERHALTER. Yes.

Mr. ROBERTS. Now, that seems to be the greatest width?

Mr. LEE. You are talking of the width of the river or the channel?

Mr. ROBERTS. Of the river when they get the new pierhead lines established.

Mr. LEE. The width of the channel now is 400 feet.

Mr. ROBERTS. It can not be over 600 feet.

Mr. LEE. Here is the latest map of the river, showing the channel to be 400 feet.

Mr. ROBERTS. But that was having in mind, as I understood, the width of the river as 1,500 feet.

Mr. LEE. Dredged 1,500 altogether?

Mr. ROBERTS. Yes; but to do that you have got to go away back into the land.

Capt. WINTERHALTER. That is at an angle, not the width of the river. It means just 1,500 feet of clear water in the line of the angle of the dock. If you slued the dock the way I am looking at it here, you could get 2,400 feet.

Mr. ROBERTS. Up the river?

Capt. WINTERHALTER. Yes; up the river.

Mr. LEE. I would be glad to have you point out on this latest map from the Hydrographic Office how you would get 1,500 feet when the width of the channel only shows 400 feet.

Capt. WINTERHALTER. The width of the river and the width of the channel are two different things. The river is the natural

stream and the channel is the dredged channel. That, I think we agree, is 400 feet wide.

Mr. LEE. Oh, yes.

Capt. WINTERHALTER. Now, your river has a greater width than the channel, naturally, and if I drew here—if I could, not being a draftsman—if I draw on here opposite the Norfolk Navy Yard these pierhead lines established by the commission to the scale of this chart, it would show you exactly this thing. In other words, if I had a chart prepared by the dock commissioners of the city of Norfolk, I would accept that as official for the pierhead lines; whereas I accept this as official for the navigation.

Mr. LEE. But the width of the channel of the Elizabeth River is 400 feet.

Capt. WINTERHALTER. The navigable channel; yes. Now, in addition to that there are estimates in the present report of the Chief of Engineers for widening that whole channel. I would have to look up and see just exactly what you are going to get. It is a question of widening the whole stream.

Mr. LEE. Can you tell me, Captain, how long it would take to build a dry dock at League Island Navy Yard 1,700 feet long?

Capt. WINTERHALTER. No; I could not. It would not take any longer there than anywhere else, perhaps not as long. From your previous question of working from both ends, and having granted your premises in that respect, I suppose it would be faster, quicker work.

Mr. LEE. You say the depth of the river has nothing to do with the location of the dry dock at Philadelphia?

Capt. WINTERHALTER. That is the strategical location. Yes; it has everything to do with it.

Mr. LEE. I am talking about the depth of the river.

Capt. WINTERHALTER. At least in this sense, Mr. Lee. I am sorry I have not made that clear. It is in the sense we should have a dry dock 40 feet deep.

Mr. LEE. You should have a dry dock 40 feet deep?

Capt. WINTERHALTER. Yes.

Mr. LEE. Suppose they built a dock at Philadelphia and made it 40 feet deep, what would be the result?

Capt. WINTERHALTER. You would have 10 feet of mud outside.

Mr. LEE. If a battleship would float in, wouldn't it float out?

Capt. WINTERHALTER. Decidedly; also the mud.

Mr. LEE. Well, I think we have enough mud on the Schmoele tract to fill up both dry docks.

Capt. WINTERHALTER. I guess you have.

Mr. LEE. At least I have not been able to get the borings for that particular place.

Capt. WINTERHALTER. Yes.

The CHAIRMAN. Mr. Secretary, I have a letter from you of January 5 suggesting a proviso to the appropriation bill relative to 12 officers commissioned yearly—12 officers of the rank of ensign from among chief boatswains and boatswains, chief gunners and gunners, and chief machinists and machinists, who successfully pass a physical examination and a competitive examination, etc., and I will put that in the hearing as a suggested amendment.

(The letter referred to is as follows:)

DEPARTMENT OF THE NAVY,
Washington, January 5, 1914.

MY DEAR MR. CHAIRMAN: Under existing law there may be commissioned yearly 12 officers of the rank of ensign from among chief boatswains and boatswains, chief gunners and gunners, and chief machinists and machinists who successfully pass a physical examination and a competitive professional examination, when the vacancies in the grade of ensign are not filled by graduates from the Naval Academy. The effect of this law has been very satisfactory. With such an opportunity to better their positions, these officers form habits of study and application, become more alert, more efficient, more ambitious, and thus enhance the discipline and morale of the Navy.

However, the door of opportunity is not held open to those in the grade of chief carpenter and carpenter whose duties are not chiefly that of a journeyman carpenter, but are such that they are trained in modern man-of-war seamanship as well as in their trade. These officers are left to stagnate without hope of advancement. The department believes, in simple justice, that these latter classes of officers, if able to demonstrate well-rounded fitness by a thorough physical and professional examination, should be equally entitled to advancement to the grade of ensign with that class of chief warrant and warrant officers in whose favor the law now discriminates.

Believing that one class of officers should not be favored over another, and having in view the far-reaching improvement that has been proven to result from such legislation, the department has drafted, and herewith submits with its strong commendation, an amendment to the forthcoming appropriation act which will extend the benefits of the existing law to this excepted class of officers.

Faithfully, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

The CHAIRMAN COMMITTEE ON NAVAL AFFAIRS,
House of Representatives.

Capt. WINTERHALTER. I would also suggest, Mr. Chairman, that you insert this memorandum which has been prepared.

The CHAIRMAN. Yes.

(The memorandum referred to is as follows:)

AMENDMENT PROPOSED BY THE NAVY DEPARTMENT TO THE FORTHCOMING NAVAL APPROPRIATION ACT.

Provided, That chief carpenters and carpenters shall be eligible for appointment to the grade of ensign under the restrictions imposed by law upon the appointment of chief boatswains and boatswains to that grade.

Mr. LEE. I would just like to ask one question in regard to the different costs of the dry docks at Norfolk—the present dry dock—and the one at Philadelphia. Let the actual costs be put in in regard to the power plant at League Island.

Capt. WINTERHALTER. Oh, yes; the power plants, of course; we can get their costs.

Mr. GERRY. I have here the hearings of 1912, when Mr. Meyer was Secretary. On page 709 he referred to the question of making Narragansett Bay a naval base and to the views of the joint Army and Navy Board. I would like to ask you, Mr. Secretary, if you have ever considered that matter—the advisability of Narragansett Bay as a naval base.

Secretary DANIELS. I understood that is the recommendation—the recommendation of the General Board.

The CHAIRMAN. He never made any recommendation.

Mr. GERRY. Didn't he?

The CHAIRMAN. No.

Mr. GERRY. As I understand it, he simply said he wanted to look into the matter first.

The CHAIRMAN. He simply stated he was considering it, and he expressly stated that he had not reached any conclusion and was not offering any suggestion, but the matter was being discussed and considered.

Mr. GERRY. Exactly, Mr. Chairman.

What I wanted to find out from the Secretary was whether he had considered that any further—if it had been taken up by the Navy Department as all?

Secretary DANIELS. Not since I have been in office; no.

Capt. WINTERHALTER. I might say, Mr. Secretary, perhaps you do not recall, but the proposition did come over from the General Board, a revision of the general proposition in regard to the naval bases.

Secretary DANIELS. What was that?

Capt. WINTERHALTER. The retention of New York and Boston and Portsmouth at their present capacity, and that would dispose of Narragansett Bay for the present.

Mr. GERRY. What ground was that based on—on the strategic advantages?

Capt. WINTERHALTER. I think we can furnish you, Mr. Gerry, with a copy of the General Board's conclusions as a matter of interest. I do not know whether it has come up to the Secretary yet or not.

Secretary DANIELS. I have never taken it up in any way. Of course there may have been a report from the General Board, but I have never passed on it or considered it. I think the idea was at one time that we ought to have only two yards on the Atlantic coast, one, I think, at Narragansett Bay.

Mr. GERRY. That was it entirely.

Secretary DANIELS. That was the suggestion, but it looked to me like it was a theory and not a condition.

Mr. GERRY. I would just like to ask, Mr. Secretary, whether you considered that?

Secretary DANIELS. I have never gone into it.

Mr. ROBERTS. The tentative plan was to sell the other yards.

Secretary DANIELS. Yes.

Mr. ROBERTS. And to get enough from the sale to build one big yard on the Narragansett Bay?

Secretary DANIELS. Yes.

Mr. GERRY. I would like to recommend, Mr. Secretary, your consideration of that matter.

Secretary DANIELS. I will read those reports and look into it.

Mr. LEE. You spoke of the General Board. When you put in the recommendations into your report of 1914, did you have any recommendations from the General Board in regard to the dry dock?

Secretary DANIELS. I was familiar with the fact that they had several times recommended certain places.

Mr. LEE. You had not asked the General Board for——

Secretary DANIELS (interposing). A specific recommendation?

Mr. LEE. Yes.

Secretary DANIELS. I think not.

Mr. LEE. At that time?

Secretary DANIELS. I think not.

Capt. WINTERHALTER. With reference to dry docks, in general?

Mr. LEE: Yes, I am talking about the dry dock at Norfolk this year—whether the Secretary of the Navy asked the general board for a recommendation of the dry dock at Norfolk; and, if so, what date the recommendation was given and whether it appeared in the Secretary's report?

Capt. WINTERHALTER. It was already passed on and approved by the Secretary before the estimates were made.

Mr. LEE. I would be glad for the Secretary to answer.

Secretary DANIELS. I made no request from them for a particular recommendation. I knew they had recommended Norfolk as the most desirable place, and I never asked them for any specific recommendation in making my report.

Mr. LEE. You also know that the Naval Committee recommended last year, by a vote of 13 to 5, to place a 1,700-foot dry dock at Philadelphia, making two docks in one to cost a million?

Secretary DANIELS. I do not know that.

The CHAIRMAN. Gentlemen, this concludes the hearings. I shall insert several letters on various matters in your hearing. We are very much obliged to you, Mr. Secretary, for your presence.

THE LAKE TORPEDO BOAT CO.,
Bridgeport, Conn., February 12, 1914.

THE CHAIRMAN NAVAL AFFAIRS COMMITTEE,
House of Representatives, Washington, D. C.

SIR: I have the honor to request that you place before the Naval Affairs Committee and print in the hearings the following:

1. I have good reason to believe that the Naval Affairs Committee of the House of Representatives, in whole or in part, is innocently doing me, my company, and its employees a great wrong, and so I want to frankly state certain facts which I trust each member will seriously consider and then right any wrong done.

2. In the early stages of submarine legislation Congress specified the *Holland* type of submarines, and for many years the legislation provided for the *Holland* type in language that shut out competition, in spite of the fact that my type of submarine had been recognized abroad as being safer and a superior type.

In 1901 I was called to Washington by Senator Hale, then chairman of the Senate Naval Affairs Committee, and asked to submit plans to the Navy Department for a submarine because the *Holland* type had not proved satisfactory. The hearings of Admirals O'Neil, Melville, Bradford, and Bowles before your committee fully set forth the unsatisfactory condition of the then *Holland* craft.

In accordance with the above request, I prepared plans for a submarine torpedo boat and submitted the same to the board on construction. The board is on record as saying that it considered a submarine built on those plans would be superior to any torpedo boat built or proposed to be built in America or abroad.

The admirals stated their hands were tied, as the legislation only permitted them to build the *Holland* type made by the Electric Boat Co.

The admirals suggested that if myself and friends would build a submarine at our own expense and submit it, the Navy Department would try it out and if it proved equal to the department's requirements the Navy Department would recommend its purchase. I therefore built the submarine torpedo boat *Protector* and offered her for trial against the *Holland* type, *Adder* and *Mocca* in, several of which type and class were then in commission in the United States Navy.

Objections were made to submitting one of the then best existing United States Navy submarines in competition with the *Protector*, and sufficient influence was brought to bear to delay the official trials of the *Protector* until the new and larger *Holland* type *Fulton* was built by the Electric Boat Co. We waited for months at great expense and much hardship. We had not received 1 penny from any Government during the development of the *Protector*. Finally, Mr. Taft, then Secretary of War, appointed a board of officers to investigate and report upon the merits of the two types of submarines for harbor and coast defense.

This board reported unanimously in favor of the *Lake* type, and a bill was passed by the Senate for her purchase.

This bill was defeated in the House Committee by a certain Member of the then Congress. This Member was recently sentenced to jail for defrauding the Government.

Our finances being exhausted in the long wait for our competitor to come up to the scratch, we were forced to accept a foreign offer for the *Protector* and she was shipped. Within a few days after the *Protector* left America, our competitors offered the *Fulton* for trials, which were had. Secretary of the Navy Moody refused to accept the trials as a basis of a contract for additional Holland craft and the appropriation went back into the Treasury.

The Holland submarines of this period were what is known as diving submarines and many officers of the Navy Department considered them unsafe. They were of the same type as the British A-7 recently lost. A large number of that A class have been lost along with their unfortunate crews.

It soon developed that the *Fulton* had been sold to the same country as the *Protector*. This country tried both out in competitive trials of its own and awarded us the only contract for additional boats.

I then built in America the *Simon Lake X*, but Secretary of the Navy Paul Morton, at the request of the attorney of the Electric Boat Co., an ex-United States Senator, and a strong personal friend of Mr. Morton, refused to put one of the Government's Holland type into side-by-side competition with the *Simon Lake X*. I sold her also abroad.

My company then built at our own expense of \$277,000 the *Lake* for competition under the law. While the *Lake* was building, Congress, by means of a conference committee and without notice to us, amended the appropriation act under which the *Lake* was being built. The effect of the amendment was to prevent the Navy Department from purchasing the *Lake*, which was an 8-knot craft, because the *Lake* could not meet in physical competition the Holland *Octopus*, an 11-knot craft, which had been started after the *Lake* was started under an appropriation act which would have permitted the purchase of the *Lake* had not Congress legislated the *Lake* out of existence.

Our competitors tried their best to keep us from getting United States Navy business, but after an appeal to the Attorney General of the United States we got a contract for the *Seal*, the *G-1*, upon condition that no money would be paid until delivered after trials in which she had to equal the best boat built or building for the United States Navy.

Her trials proved satisfactory and were followed by payment; but she cost us about \$139,000 more than we received from the Government under our contract. However, the *G-1* challenges any submarine in the world to show an equal performance in official trials.

In all, we expended from our own pocket over \$1,000,000 in building submarines to break down the submarine monopoly which existed for many years in America.

During the time we had competitive legislation an attempt was twice made in Congress to enact legislation that would give by legislative enactment all the business to one competitor.

We have fought to the best of our ability to prevent the reestablishment of a submarine monopoly in the United States.

As a result of our fights for open competition, we were awarded contracts for the *G-2* and then the *G-3*, and, finally, the *L-5*, *6*, *7*. With only one contract at a time, it was hard work to carry a heavy overhead expense incident to skilled special engineers and mechanics.

When we got the three *L* contracts for \$1,655,000, we believed we saw daylight and a chance to grow for the first time under substantial Government recognition.

We secured from the Navy Department the expert services of Naval Constructor R. H. M. Robinson and his principal assistants, P. B. Brill and R. E. Anderson, naval architects, who had direct charge of the design of all our dreadnaughts from the *Delaware* down to the *Pennsylvania*, and the torpedo boats Nos. 17 to 56.

We put up a big bond for a five-year contract with Mr. Robinson. Our financial backer was preparing to put several hundred thousand dollars into the business to carry on the *L* contracts. The hard times of 1913 set in and our financial backer was called for several hundred-thousand-dollar loans and could not go ahead as he intended.

We reorganized and tried to enlist loans and fresh capital during the tariff and currency legislation, when everything was stagnant.

We had to get the *G-2* and the *G-3* ready. We frankly told the Navy Department our troubles and the department did whatever it could under the law and the contracts to assist us deliver the *G-2* and the *G-3*. The *G-2* is now in commission and running every day, I believe. The *G-3* is at the Brooklyn Navy Yard waiting for her engines from abroad.

Our competitors learned of our financial troubles and attempts to raise money to stay in business and keep our *L* contracts. Our bonding company informed us that a

man claiming to represent our competitors came to them and wished to secure our bonding company's cooperation in having out L contracts forfeited so that our competitors could get our contracts.

Our competitor revived some patent suits started when we were trying to first finance ourselves over 10 years ago.

These suits had been abandoned in spite of our attempts to get them to trial. These fresh patent suits were started in the fall of 1913, and are in Equity Nos. 412, 426, 433, 450, 451, United States District Court, Trenton, N. J. Our competitors alleged that we infringed their patents. We have some 50 patents of our own for building our own type of submarine which has little in common with the Holland diving type of submarine. We answered under oath that we did not use any Holland patents in the Lake type of submarine, and filed a counterclaim for \$1,000,000 against the Electric Boat Co. for alleged damages for the Electric Boat Co.'s alleged prevention of our selling our securities by bringing unmerited patent suits to cloud our securities and for past and present attempts to stifle United States Navy submarine competition, unfair competition, and damages caused by the amended legislation that caused our Lake to be a practical loss of \$277,000. We made the Quigg-Lessner and the Lilley investigation records a part of our answer by reference so that the affairs incident to those investigations may be tried again in a Federal court.

Congress, in the last appropriation bill, passed a law that requires unrestricted competition in letting submarine contracts.

We request the Naval Affairs Committee to take judicial notice of the above suits in equity and the sworn statements therein to effect that the Electric Boat Co. is trying to establish a monopoly.

The old New Jersey company is reorganized and the business is now carried on by a company of the same name but incorporated under the laws of the State of Maine. The name of the company is the Lake Torpedo Boat Company of Maine.

The new Maine company, on December 2, 1913, submitted bids for submarines Nos. 48-51, and believes itself low bidder for the craft specifically called for by the circular.

The Maine company is in shape financially to go ahead with the L contracts in case new business is awarded us from Nos. 48-51.

In spite of all our troubles in overcoming conditions that have bankrupt many concerns during the past year, we now find that the Secretary of the Navy has been talked to by a member or members of the Naval Committee, which has requested all the documents, etc., in connection with our affairs and the G-1, 2, 3, and we believe an intimation has been made to the Secretary that he should not award us any of the Nos. 48-51 submarines.

We understand an intimation has been made that Congress might not vote for additional submarines when the Secretary of the Navy is holding up present awards.

We understand that intimations have been made that the Lake people should put the rest of their craft into service before receiving additional business.

In spite of the secrets act and the confidential clause in submarine contracts, no contractor can have the least objection to all inquiries based upon proper motives of protecting the public, but we believe the public might have more faith in submarine inquiries if they were made impartially about all types of craft and about all competitors.

We are obliged to request in fair play that the Naval Committee cause the Navy Department to furnish the Naval Committee the same information about the Holland as it does about the Lake submarines.

We challenge anybody to produce a report of official trials of any submarine showing performances equal to those of the G-1, which we understand has been criticized on account of her engine troubles.

We had no serious troubles with the G-1 and the Navy ran the G-1 from New York to Newport without troubles. On her way back she developed shaft troubles. We have since discovered that a different and light oil was used, and believe that this oil caused the initial troubles. However, in perfect frankness we want to state that we believe the engines could be improved, in view of later-day experiences and developments in engines for submarines. Hindsight is better than foresight, and we claim that the G-1 engines are as good as any engines of her day.

The only troubles that have ever occurred in Lake-type submarines have been engine troubles which have absolutely no bearing upon the merits or principles of the Lake submarines as a whole or any other submarine type.

I state that there has not yet been developed an entirely satisfactory internal combustion engine for submarines, or for that matter for any type of vessel. Congress has itself appropriated \$250,000 to enable the Navy Department to develop a satisfactory engine for naval purposes and the work is now underway.

We have always bought the best available engines for use in our boats and presume our competitors have done likewise.

Engine troubles in submarines have been common to every type and every navy without a single exception. I personally know of many failures and do not know of a single unqualified success. The most successful submarine engine so far built, I believe, is the engine for G-3, which is being imported from abroad.

The G 3 engines were recently run under full power test for 24 hours continuously and passed naval inspection.

If our engine troubles are to influence the committee in its attitude toward the Lake submarine and prevent us from having the necessary business to stay alive, we think the Naval Affairs Committee, in justice to themselves and ourselves, should ask the Navy Department what, if any, troubles have developed in regard to the engines of each type in the United States Navy, and whether the engine troubles are common to every navy.

We object to anybody talking about our engine troubles alone and not considering the same troubles in our competitors' craft when it comes to giving our competitors business and eliminating us for alleged engine difficulties.

We believe we have a perfect right to demand that the Naval Committee have the Navy Department inform Congress as to the following if Congress is to express its views to the Secretary in regard to awards of naval contracts:

A. Whether the engines in United States Navy submarines run at about 75 per cent of contract speed.

B. Whether the engines in United States Navy submarines cost about a third of their original price each year for repairs, etc.

C. Whether large sums of money have been expended for battery renewals.

D. Whether the United States Navy has a submarine that has equaled the G I official trials.

E. Whether the United States Navy Department has checked up lien statements to effect that all materials in place in craft have been paid for by the contractor and found that no subcontractor or supply man is owed money by the contractor making the sworn lien statement.

F. Whether each bidder for Nos. 48-51 has filed with the Navy Department a statement of assets and liabilities showing a financial ability to perform all contracts awarded.

G. Whether any bidder, other than ourselves, can show that the bidder has no debts and is in a financial position to carry out all contracts.

F. Whether any penalty has been imposed, waived, or is assessable on any submarine built or building for the United States Navy, and if so the amount involved for each submarine.

Until the above inquiries have been answered, we earnestly submit that no Member of Congress is qualified to express an impartial opinion to the Secretary of the Navy in regard to whether he should award or not award us or any other competitor contracts. Over \$1,000,000 private money has been expended in developing the Lake type of submarine for the defense of this country, and we have built a special plant at Bridgeport where we have gathered an expert force of mechanics.

We must have additional business in order to exist, and we submit that any person who has been led by knowledge of partial facts to express views against us to the Secretary of the Navy is in honor bound to right any wrong done us innocently.

We ask no special favors of any person. We only want impartial treatment. We are prepared to stand upon our actual comparative scientific merits, but think the naval experts are the best qualified to judge the situation which we think should be free from congressional views about technical matters.

We have no agents before Congress, and I am obliged to write you direct.

We believe our craft compare favorably with all others, and that with our expert naval people we can deliver with dispatch a submarine second to none.

In case the Government gives us additional business we are in financial condition to take care of it with dispatch, but if it is to be the policy not to give us additional business we are forced by conditions beyond our control to abandon our Bridgeport shipyard for submarines and throw out of employment our mechanics.

We trust no Member of Congress will lightly treat this subject and that no attempts will be tolerated to so legislate that any one submarine company shall have a monopoly in America.

We do not ask any special favor from Congress. All we want is open legislation and the Navy Department free to do whatever it deems right scientifically in submarines.

Our company is composed entirely of native-born Americans, while it is said our chief competitor is foreign financiers, operating through their English shipbuilding trust and its affiliated American submarine corporation. If any favors are to be shown, we feel entitled to a fair share.

If the Naval Committee believes itself justified in intimating its views to the Secretary or naval officers, I think intimations should be a matter of open legislation and that we should have a fair chance to place our views before the public through the committee. I think it fair that all records of each submarine be printed along with anything asked for re my craft.

That is fair play, and as an American citizen and inventor who has given the best years of my life to devising and improving a weapon for the defense of my country I ask no more and no less.

Yours, respectfully,

SIMON LAKE.

NAVY DEPARTMENT,
Washington, February 13, 1914.

MY DEAR MR. PADGETT: Referring to your letter of the 12th instant, requesting that certain information be sent to the committee for its consideration as to (a) the amount necessary to be appropriated for the first fiscal year for each of the types of vessels recommended in the naval estimates for the building program for next year under the appropriations "Increase of the Navy, construction and machinery," "Increase of the Navy, equipment," and "Increase of the Navy, armor and armament"; also (b) the total cost of each type of vessel, I forward herewith a letter submitted by the chiefs of the Bureaus of Construction and Repair, Steam Engineering, and Ordnance, giving in detail the estimates of total costs and first year's costs of the types of vessels recommended in the naval estimates.

Sincerely, yours,

FRANKLIN D. ROOSEVELT,
Acting Secretary.

HON. LEMUEL P. PADGETT, M. C.,
*Chairman Committee on Naval Affairs,
House of Representatives.*

WASHINGTON, D. C., February 13, 1914.

From: Chief of Bureau of Construction and Repair.
Chief of Bureau of Steam Engineering.
Chief of Bureau of Ordnance.

To: Secretary of the Navy (Division of Material).

Subject: Building program 1915, estimates.

Reference: (a) Annual report of Secretary of the Navy for the fiscal year 1913, page 6.

1. As orally directed by the department, the bureaus submit the following estimates of cost for the building program contained in annual report of above reference. The estimates are submitted separately for each vessel and state totals of each class. The bureaus assume that of the three submarines, two will be of the smaller type similar to those heretofore built (designated below as "coast defense submarines"), and that one will be of the larger and faster type designated as "seagoing submarine."

Appropriations.	Eight-hour day.	Navy yard built.
Battleships:		
Increase of the Navy, construction and maintenance.....	\$7,800,000	\$9,750,000
Increase of the Navy, equipment.....	110,000	110,000
Increase of the Navy, armor and armament.....	7,013,410	7,013,410
Total cost, each.....	14,923,410	16,873,410
Total cost, two.....	29,846,820	33,746,820
Required for first year:		
Increase of the Navy, construction and maintenance.....	2,000,000	2,500,000
Increase of the Navy, equipment.....	60,000	60,000
Increase of the Navy, armor and armament.....	4,000,000	4,000,000
Total for first year, each.....	6,060,000	6,560,000
Total for first year, two.....	12,120,000	13,120,000
Destroyer:		
Increase of the Navy, construction and maintenance.....	950,000	1,188,000
Increase of the Navy, equipment.....	40,000	40,000
Increase of the Navy, armor and armament.....	401,454	401,454
Total cost, each.....	1,391,454	1,629,454
Total cost, 8.....	11,131,632	13,035,632
Required for first year:		
Increase of the Navy, construction and maintenance.....	475,000	594,000
Increase of the Navy, equipment.....	21,000	21,000
Increase of the Navy, armor and armament.....	225,000	225,000
Total for first year, each.....	721,000	840,000
Total for first year, 8.....	5,768,000	6,720,000
Submarines (coast defense):		
Increase of the Navy, construction and maintenance.....	650,000	812,000
Increase of the Navy, equipment.....	12,500	12,500
Increase of the Navy, armor and armament.....	127,800	127,800
Total cost, each.....	790,300	952,300
Total cost, 2.....	1,580,600	1,904,600
Required for first year:		
Increase of the Navy, construction and maintenance.....	280,000	350,000
Increase of the Navy, equipment.....	7,000	7,000
Increase of the Navy, armor and armament.....	72,750	72,750
Total for first year, each.....	359,750	429,750
Total for first year, 2.....	719,500	859,500
Submarine (seagoing):		
Increase of the Navy, construction and maintenance.....	1,100,000	1,375,000
Increase of the Navy, equipment.....	16,000	16,000
Increase of the Navy, armor and armament.....	255,600	255,600
Total cost, 1.....	1,371,600	1,646,600
Required for first year:		
Increase of the Navy, construction and maintenance.....	500,000	625,000
Increase of the Navy, equipment.....	9,000	9,000
Increase of the Navy, armor and armament.....	145,500	145,500
Total for first year, 1.....	654,500	779,500

Summary contract built eight-hour day.

Number and type.	Total.			First year.		
	Increase of the Navy, construction and maintenance.	Increase of the Navy, equipment.	Armor and armament.	Increase of the Navy, construction and maintenance.	Increase of the Navy, equipment.	Armor and armament.
2 battleships.....	\$15,600,000	\$220,000	\$14,026,820	\$4,000,000	\$120,000	\$8,000,000
8 destroyers.....	7,600,000	320,000	3,211,632	3,800,000	168,000	1,800,000
2 submarines (coast defense)....	1,300,000	25,000	255,600	560,000	14,000	145,500
1 submarine (seagoing).....	1,100,000	16,000	255,600	500,000	9,000	145,500
Total.....	25,600,000	581,000	17,749,652	8,860,000	311,000	10,091,000

Total:	
Increase of the Navy, construction and maintenance.....	\$25,600,000
Increase of the Navy, equipment.....	581,000
Armor and armament.....	17,749,652
Total increase of the Navy, construction and maintenance, equipment, and armor and armament.....	43,930,652
Required for first year:	
Increase of the Navy, construction and maintenance.....	8,860,000
Increase of the Navy, equipment.....	311,000
Armor and armament.....	10,091,000
Total increase of the Navy, construction and maintenance, equipment, and armor and armament.....	19,262,000

Summary, navy-yard built.

No.	Type.	Total.			First year.		
		Increase Navy, construction and maintenance.	Increase Navy, equipment.	Increase Navy, armor and armament.	Increase Navy, construction and maintenance.	Increase Navy, equipment.	Increase Navy, armor and armament.
2	Battleships.....	\$19,500,000	\$220,000	\$14,026,820	\$5,000,000	\$120,000	\$8,000,000
8	Destroyers.....	9,504,000	320,000	3,211,632	4,752,000	168,000	1,800,000
2	Submarines (coast defense).....	1,624,000	25,000	255,600	700,000	14,000	145,500
1	Submarine (seagoing).....	1,375,000	16,000	255,600	625,000	9,000	145,500
	Total.....	32,003,000	581,000	17,749,652	11,077,000	311,000	1,091,000

Increase of the Navy, construction and maintenance.....	\$32,003,000
Increase of the Navy, equipment.....	581,000
Increase of the Navy, armor and armament.....	17,749,652
Total increase of the Navy, construction and maintenance, equipment, and armor and armament.....	50,333,652
Required for first year:	
Increase of the Navy, construction and maintenance.....	11,077,000
Increase of the Navy, equipment.....	311,000
Increase of the Navy, armor and armament.....	10,091,000
Total increase of the Navy, construction and maintenance, equipment, and armor and armament.....	21,479,000

WATT.
GRIFFIN.
J. STRAUSS.

NAVY DEPARTMENT,
Washington, February 16, 1914.

Hon. L. E. PADGETT, M. C.,
Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.

SIR: 1. In the act of Congress approved March 4, 1913, making appropriations for the naval service, for the fiscal year ending June 30, 1914, \$300,000 was appropriated, to be available until expended, for the construction of a wrecking pontoon for submarines. Bids were duly solicited for this construction, but only one bid was submitted, that of the William Cramp & Sons Ship and Engine Building Co., of Philadelphia, Pa.

2. This bid was \$290,000, and included only the pontoon, necessary pumps, etc. It was stated that the money available was not sufficient to supply wrecking gear, although arrangements were made so that the Government could supply this gear after completion of the vessel. The department has therefore only one bid to consider, and for the reasons given hereinafter the construction of this pontoon is not considered to be justified.

3. The question of foreign submarine salvage vessels has been gone into very carefully with the Office of Naval Intelligence during the last few months. Considering this question of salvage vessels and testing docks, or pontoons in general, it is to be noted that practically all foreign navies equipped with many submarines have built some form of salvage vessel for the purpose of raising damaged submarines. These are essentially vessels with strong lifting gear. As far as testing pontoons are concerned, so far as the department is aware, only two are in existence. The Fiat-San Giorgio in Italy have one, in which they test the hulls of submarines built at their works. In addition, a combination testing pontoon and tender for submarines for Brazil is being built by the same company.

4. In the case of the proposed pontoon for which one bid has been received, its essential object, aside from possible use as a salvage vessel, is to test the hulls of submarines. Considering first the salvage features, it is true that in one successful operation it might easily justify its whole cost. However, should we buy the pontoon as offered, no wrecking gear is installed, the arrangements for such installation only being made. It is proposed to install this gear at Government expense after delivery, and this would cost very considerably and take some length of time. Further, with our great length of coast line, and with the submarines scattered by groups along it, in the Atlantic from Boston to Cristobal, and in the Pacific from Puget Sound to the Canal Zone on one hand, and Manila and Honolulu on the other, it seems very doubtful that in the event of an accident a single powerful salvage vessel would be where it was wanted. Further, to require that a proposed wrecking vessel should be in the vicinity of where submarines are operating would tend to restrict and hamper their radius of action, which is now great and constantly increasing. Next, considering the use of this pontoon in testing the hulls of submarines, the submarines to be tested may be divided into two groups: (1) old submarines, and (2) new submarines. The old submarines (1)—that is, submarines in service—will be tested purely for information and to insure that they are strong for operation. It is the intention that this pontoon if built shall be stationed on the Atlantic coast. The submarines in service or soon to go in service on the Atlantic coast would be the only ones, therefore, available for test. These vessels have all either recently been tested, or would have had their test shortly before the completion of the pontoon. In other words, none of the boats in service available for test by the pontoon would need a retest under ordinary circumstances for from three to five years.

5. There remains, therefore, only group (2)—new submarines. The pontoon, if built, would be used in testing these submarines in place of submerging them to the test depth of 200 feet, as required by contract. In the past and until quite recently, the cost of this operation of submerging has been comparatively great. One of the principal objects in purchasing this pontoon was to save the Government this cost, which was, of course, included in the contract price of submarines. However, as advance in submarine-boat construction has increased, the confidence in the strength and workmanship of these boats, the operation has been carried out by the contractors in a way that, in the recent boats, has very materially decreased the cost. Moreover, within the last few months the future building of some high-speed submarines has been practically decided upon. The dimensions of these boats in all probability will be such that they could not be tested in this pontoon.

6. Summing up the facts outlined—i. e., the use to which the pontoon would be put, the probability of not being able to use it for salvage in the event of accident, its original first cost, its inadequacy for tests of the larger submarines of the future, and the fact that we have only one bidder for a device of special type and one little used

abroad—the department has directed that contract be not awarded for this pontoon, that the bid be rejected, and that the requisition be canceled.

7. There will remain, therefore, an appropriation of \$300,000 for the specific purpose of constructing a wrecking and testing pontoon. It is considered that this amount should be reappropriated for new submarine construction. As precedents for transferring such unexpended appropriations we have: The act of March 13, 1908, wherein, under Bureau of Steam Engineering, part of this appropriation was authorized to be used for the completion of the machinery of the tugs *Patapsco* and *Patuxent*; the act of March 3, 1909, wherein, under Bureau of Steam Engineering, part of this appropriation was authorized to be used for the building of the machinery of the *Vestal* and *Prometheus*; the act of August 22, 1912, wherein, under public works, Bureau of Yards and Docks, the unexpended balance of the appropriation in the act of March 2, 1907, for the construction of officers' quarters at Pensacola, was reappropriated and made available for officers' quarters, etc., at Key West; and the act of March 4, 1913, wherein, under the appropriation "Steam machinery" for the fiscal years ending June 30, 1912, and June 30, 1913, the unobligated balance, not exceeding \$250,000, was reappropriated and authorized for the development of a heavy oil engine.

8. For the reasons given, the department is strongly of the opinion that this appropriation could be much better used in new submarine construction than in the construction of the testing pontoon. Although the amount of the appropriation alone is not sufficient to obtain a submarine of the size now building and of the present characteristics it is believed that by combining this amount with the appropriation which will probably be made at the present session of Congress for submarines for the fiscal year ending June 30, 1915, an additional boat of the latest characteristics can be obtained. For such a transfer of appropriations it should be noted that no reappropriation will be necessary, as the money is available until expended.

9. It is therefore recommended that there be included in the naval act making appropriations for the fiscal year ending June 30, 1915, the following clauses under "Increase of the Navy, torpedo boats":

"That the appropriation made in the naval act approved March 4, 1913, 'Wrecking pontoon: For construction or purchase of a testing and wrecking pontoon for submarines, to be available until expended, \$300,000,' is hereby made available under 'Increase of the Navy, torpedo boats,' and in addition to the amount appropriated thereunder toward the construction of one submarine additional to those herein authorized."

Respectfully,

JOSEPHUS DANIELS,
Secretary of the Navy.

NAVY DEPARTMENT,
Washington, February 14, 1914.

MY DEAR MR. PADGETT: Referring to the naval appropriation act of March 4, 1913 which, under the heading of "Public works, Bureau of Yards and Docks, navy yard Norfolk," authorizes one "one hundred and fifty-ton crane (limit of cost not exceeding \$300,000)," the department has made careful investigation and has found that the limit of cost will not permit the inclusion of the very important feature of revolution of the jib. In view of the value of this feature the department recommends that, under the heading "Bureau of Yards and Docks, navy yard, Norfolk, Va.," the phraseology "One hundred and fifty-ton crane (limit of cost not exceeding \$300,000)," appearing in draft No. 1 of the pending House naval appropriation bill, be changed to read:

"The one hundred and fifty-ton crane authorized by the act of March 4, 1913, for the navy yard, Norfolk, Virginia, shall be of the floating revolving type, and the limit of cost is hereby increased to \$450,000, \$200,000."

It will be noted that the proposed phraseology makes no change in the amount of money to be appropriated for the coming fiscal year, but increases the authorization to a limit of cost not to exceed \$450,000, and will necessitate additional appropriation for the following fiscal year, but the ultimate increase in appropriation is considered fully warranted by the materially increased value of the revolving jib feature of the floating crane.

Sincerely, yours,

FRANKLIN D. ROOSEVELT,
Acting Secretary.

HON. LEMUEL P. PADGETT, M. C.,
*Chairman Committee on Naval Affairs,
House of Representatives.*

**NAVY DEPARTMENT,
Washington, February 14, 1914.**

MY DEAR CONGRESSMAN: Referring to the matter of the construction of the dry dock at the naval station, Pearl Harbor, Hawaii, the following general facts are submitted for your information:

The act approved May 13, 1906, authorized the construction of "one graving dry dock, capable of receiving the largest war vessels of the Navy, at a cost not to exceed two million dollars" and appropriated therefor the sum of \$300,000. Plans were prepared and proposals were received on February 13, 1909, after public advertisement, for the construction of a dry dock 1,195 feet long, separated into two parts by an intermediate caisson. Bids received, being in excess of the amount authorized for the work, were necessarily rejected. Bids were again invited on May 22, 1909, and on July 22, 1909, formal contract was entered into with the San Francisco Bridge Company, for the construction of a dock having length of 589 feet between the inside coping at head of the dock and outer sill. Contract was modified, June 27, 1910, after obtaining increase in authorized limit of cost, to provide a dock having the following dimensions:

	Ft. in.
Length inside of coping at head to outer sill.....	800
Length over all.....	831
Width over all.....	145
Width at entrance top of keel blocks.....	130 1/2
Width of entrance at coping level.....	120

By agreement No. 1381-C, dated January 2, 1913, after obtaining a still further increase in authorized cost, the length was increased to 1,008 feet between inside of coping at head and outer sill, the other dimensions remaining unchanged.

Borings and examinations which were made before the award of the original contract indicated that the structure could be built in open excavation, and the work was started upon this assumption. During the month of May, 1911, after practically completing the excavation, the contractor began pumping a portion of the work which had been surrounded by a cofferdam; when a depth of about 20 feet had been obtained it was observed that there was a disturbance in the bottom strata, whereupon pumping was discontinued; after making certain examinations, including the driving of test piles, it was arranged by supplemental agreement No. 1381-B, executed August 5, 1911, that the dock should be supported upon piling and that a certain amount of concrete in the bottom of the dock should be placed by the underwater method. Work was continued, and in January, 1912, the contractor again began pumping out a section of the work; after unwatering and exposing the concrete in the bottom it was found that on account of unusual physical conditions in combination with difficulties involved in the placing of concrete under water, the concrete was not of satisfactory quality. Further elaborate investigations and experiments were then made, and in August, 1912, work was proceeded with, using a much richer mixture for the underwater concrete. On February 6, 1913, the contractor began unwatering the second section, and at 2 o'clock p. m. on February 17, had reached a depth of over 36 feet. At about 3 o'clock p. m. an upheaval of the bottom took place, which wrecked the cofferdam and the construction of this section.

After this failure, on receiving advice as to the seriousness of it, the department directed the Chief of the Bureau of Yards and Docks and Civil Engineer F. R. Harris to go out there and examine the work and advise as to the steps necessary to carry it out to a successful completion, and, at a later date, arranged with Mr. Alfred Noble, an eminent civil consulting engineer of New York, to visit Pearl Harbor and report on conditions and suggest remedies. The gist of all of these reports were that the department's plans for this dry dock could probably be carried out, but would involve great delay and serious hazard and gave no great assurance of the successful completion of the work or of its entire satisfaction after completion.

After negotiations with the contractors for this work, the San Francisco Bridge Co., looking to some arrangement whereby the work could be carried on with assurance of success, all of which negotiations came to nothing, the department asked for the advice of the Attorney General as to the responsibility of the contractors under this contract, and on being informed, in an opinion of January 5, 1914, to the effect that the contractors were required to bring the dock contracted for to completion if it were physically possible to do so, but were not required to guarantee that the dock shall endure and discharge its duty successfully after completion. In view of this, and of the failure to induce them to open up any negotiations looking to a change of plan or method of construction, the department, on January 26, 1914, directed them to proceed with their contract on the old plans and specifications. However, on

further negotiations, on February 10, 1914, the contractors submitted a letter to the department stating they were proceeding with the work, but in view of all of the circumstances and their familiarity with the site, they did not desire to stand in the department's way of securing a good dry dock which would stand and endure, and that they did not think that such a dry dock could be secured under this contract, and indicated their readiness to take up the question of changes in their contract to secure the desired end.

At a conference at the Navy Department, at which you were present, between Mr. Alfred Noble, the consulting civil engineer referred to, the Chief of the Bureau of Yards and Docks (Mr. Stanford), and Civil Engineer F. R. Harris, all expressed the opinion that the construction of this dry dock under the present plans and specifications was not alone fraught with the greatest hazard and probable delay in eventual completion, if completed at all, but was inadvisable as an engineering work and was not based on satisfactory assurance and factors of safety which are usually required in good engineering practice. In short, that it was impracticable.

These three engineers agreed that a different design, depending upon the use of floating caissons or boats, gave every assurance of the successful and early completion of this work, but that it would involve an increase in the authorization for this work of approximately, but not over, \$1,500,000.

The contract obligation for the dry dock now stands at \$3,168,461.61, of which the sum of \$1,036,330.01 has been paid the contractor on monthly vouchers on account of work done.

There are sufficient funds remaining under the appropriation to defray the cost of proceeding with this dry dock on the new plans indicated during the next fiscal year, but to enable the department to enter into an agreement with the contractors to proceed on the new plans it will be necessary to increase the limit of authorized cost for this structure.

Sincerely, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

HON. LEMUEL P. PADGETT,
*Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.*

NAVY DEPARTMENT,
Washington, February 14, 1914.

MY DEAR MR. PADGETT: In my annual report for the fiscal year ended June 30, 1913, I invited attention to the desirability of inaugurating a system of shipbuilding at a number of our more important navy yards. Two of these navy yards—namely, New York and Mare Island—are already provided with building facilities, and in my estimates for the fiscal year 1914–15 I included an item of \$200,000 for building slips at the navy yard, Philadelphia.

In pursuance of this subject, I would like to invite your attention to the following reasons which influence me in naming Philadelphia as being, in my opinion, the most suitable location for the establishment of facilities for the next Government shipbuilding plant:

(a) *Labor market.*—The location of Philadelphia with reference to at least two large private shipbuilding establishments and scores of other manufacturing plants, including locomotive works and other establishments employing large numbers of men, places this city in a unique position with reference to the ready supply of laborers and skilled mechanics. This is a most important consideration in the establishment of a shipbuilding plant. Not only does Philadelphia possess this requisite, but the fact that so much work of a similar character is performed in this vicinity serves to establish a reasonable wage schedule.

(b) *Supplies.*—Philadelphia is a central distributing point for shipbuilding supplies, particularly structural material. This is also an absolute requisite for rapid and economical shipbuilding.

(c) *Climate.*—The absence of severe winter weather for any considerable period makes it practicable to carry on shipbuilding work economically throughout the entire year. A large percentage of the work of building a ship consists of outside work, namely, either in the open or within the hull of the ship itself, and favorable weather conditions are essential for economical construction.

(d) *Area.*—The yard has large acreage and abundance of room is available not only for building the necessary ways, installing material racks and laying out the work in the yard, but abundance of room is available for future extensions.

(c) *Shop equipments*.—Except for foundry facilities and certain additional machine tools, the yard is already equipped with shops and tools for carrying on building work, and expenditures for this purpose will be relatively small.

I note on page 51 of draft No. 1 of the naval appropriation bill (fiscal year 1915), under navy yard, Philadelphia, the item, "building slips, two hundred thousand dollars"; the estimate of this sum, which is contained in my annual report, was intended to cover the building slips and equipment, and I would suggest that the words "and equipment" be inserted in this connection in order to prevent any possibility of misinterpretation; I consider this important, since the overhead cranes and handling facilities at the building slips are absolutely essential for shipbuilding work.

We have in immediate contemplation important shipbuilding work. Some of this should be started at the Philadelphia Navy Yard during next summer. In the circumstances it will be necessary to make the appropriation immediately available in order to take full advantage of the already large investment which the Government has at Philadelphia, and to avoid embarrassing delay in the completion of vessels whose plans are ready for execution. The \$200,000 asked for this year will give a slip and an equipment of a capacity sufficient to build submarines, transports, supply ships, and other fleet auxiliaries. These can later be enlarged to afford building facilities for a dreadnaught.

Sincerely, yours,

JOSEPHUS DANIELS.

HON. LEMUEL P. PADGETT, M. C.,
Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.

THE SECRETARY OF THE NAVY,
Washington, February 16, 1914.

MY DEAR MR. PADGETT: The act of March 4, 1913, provided \$100,000 for marine barracks, and \$48,000 for officers' quarters at the navy yard, Boston. In view of the distribution of marines in accordance with the recommendations of the General Board, as given in my hearings before your committee, it will not be necessary to provide such extensive barracks at Boston, and I have directed that no work on this project be done.

I now have to request that this item of \$148,000 be made available for use at the discretion of the Secretary of the Navy, in developing the Boston yard as may be required.

An item of the following tenor should therefore be inserted in the naval appropriation bill under "Bureau of Yards and Docks," subhead, "Navy yard, Boston":

"That the unobligated balance under the appropriation, 'Marine barracks, Boston, Mass., for the fiscal year ending June 30, 1914, not exceeding \$148,000,' is hereby reappropriated and made available for the purchase, construction, and installation of shipbuilding ways and equipment, appliances, facilities, and buildings or other purposes for the improvement and betterment of the navy yard, Boston, Mass., at the discretion of the Secretary of the Navy."

Sincerely, yours,

JOSEPHUS DANIELS.

HON. L. P. PADGETT,
Chairman Committee on Naval Affairs,
House of Representatives, Washington, D. C.

NAVY DEPARTMENT,
Washington, February 14, 1914.

HON. LEMUEL P. PADGETT,
Chairman Committee on Naval Affairs,
House of Representatives.

MY DEAR MR. PADGETT: After three years' experience with the workings of the naval supply account certain slight modifications are found to be desirable in the interests of economy and efficiency.

Under the present system it is possible to pay several times for the same article, a price being charged every time it is issued for use. Thus an anchor which will last indefinitely may be paid for out of every annual appropriation.

The following extracts from the files of the department show that there is agreement among the various bureaus that the changes here proposed are necessary.

The Bureau of Supplies and Accounts states:

"The bureau wishes to invite attention to the fact that the administration of the naval supply account has been for the past two years constantly under discussion.

The bureau therefore believes that some definite action should be taken by the department to stop the long and futile discussions that have been held on this subject, and invites the department's attention to the bureau's letter 132-5, 1125-70, dated January 27, 1913, and to an unofficial memorandum prepared for the aid for material on September 4, 1913. Both of these papers recommend that Congress be requested to modify the provisions of the law creating the naval supply account in such a manner as to provide for an actual credit being given for all material turned in from ships in commission. The bureau believes that if such a law could be passed the question under discussion would be settled to the satisfaction of all concerned."

The Bureau of Construction and Repair states:

"The bureau considers that the object desired by both bureaus primarily affected—this bureau and the Bureau of Steam Engineering—is a change in the present law, and in this particular these bureaus affected have been in substantial agreement from the beginning of the operation of the naval supply account law."

I therefore recommend the following modification of the acts referred to be inserted in the appropriation bill:

"Those portions of the acts of June 25, 1910, and March 4, 1911, which create the 'Naval supply account' under the Bureau of Supplies and Accounts are hereby so modified and amended that hereafter the appraised value of all stores, equipment, and supplies turned in from ships and ships' equipment turned in from yards or stations (except salvage) shall be credited to the current appropriations concerned, and the amounts so credited shall be available for expenditures for the same purposes as the appropriations credited until expended; and all acts or parts of acts in so far as they conflict with this provision are hereby repealed."

Within the last few days a case in point has arisen as follows: The *Castine* was put out of commission for certain necessary repairs requiring about six months' time. All stores and equipment on board were landed and turned over to the general storekeeper of the navy yard. In the usual course of events these same stores will be returned to the ship upon recommissioning next May and will have to be paid for a second time out of the same appropriations from which they were originally purchased.

The proposed amendment is designed to correct this system by which an appropriation pays more than once for the same article.

Sincerely, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

NAVY DEPARTMENT,
Washington, February 16, 1914.

MY DEAR MR. PADGETT: Referring to our recent conference when the subject of advancing the pay of trade instructors at the Naval Academy was broached, I would recommend that \$100 additional per annum be allowed those instructors who have served five years or longer.

Very sincerely,

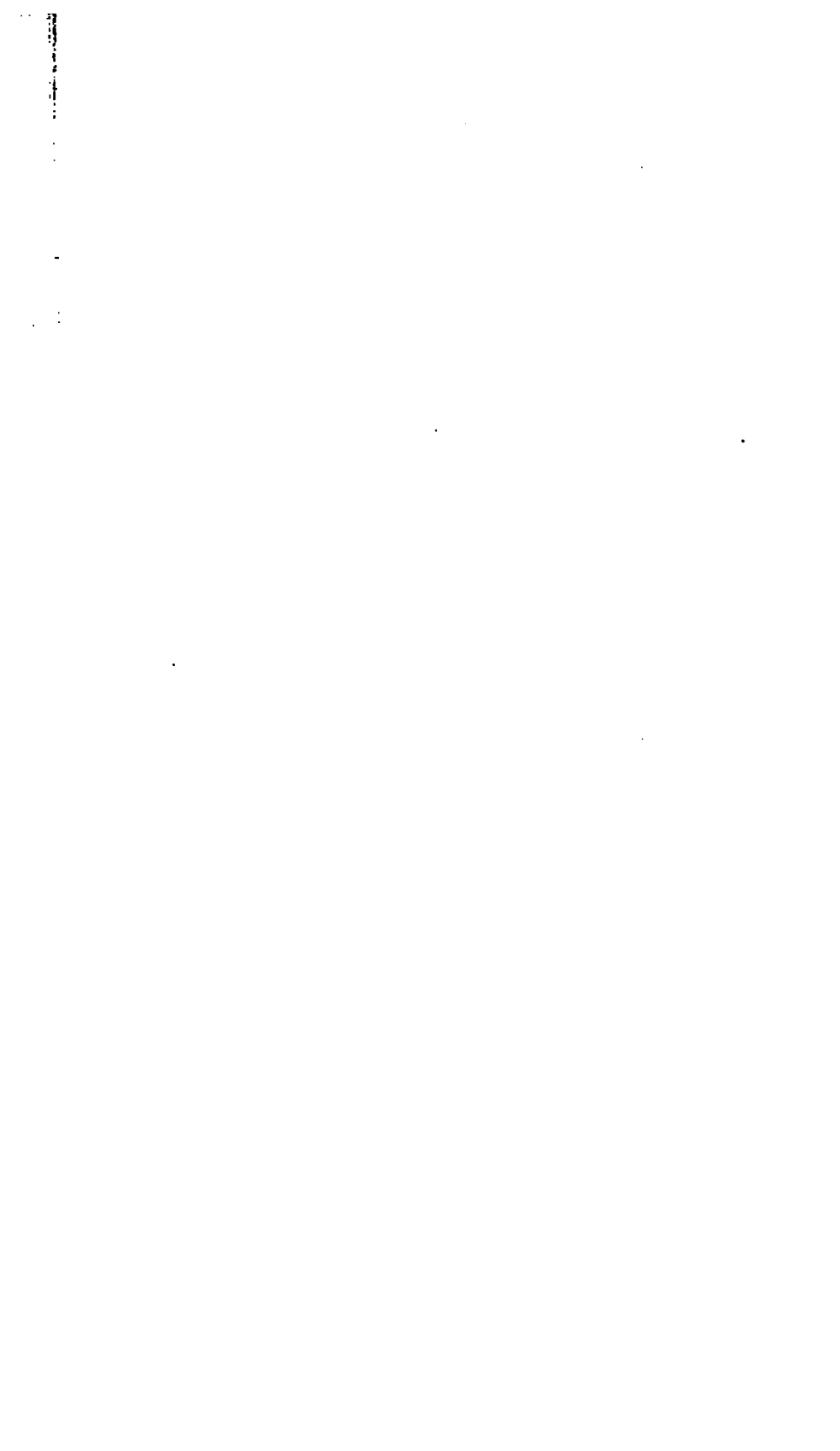
JOSEPHUS DANIELS.

Hon. L. E. PADGETT, M. C.,
Chairman Committee on Naval Affairs,
House of Representatives.

Trade instructors at the Naval Academy who have served five years or more and their present rate of pay:

L. J. M. Boyd, master machinist, \$1,800 per annum.
Eugene T. Griffin, assistant master machinist, \$1,200 per annum.
Jos. M. Armstrong, pattern maker, \$1,200 per annum.
Andrew Lewis, boiler maker, \$1,080 per annum.
P. J. Miller, blacksmith, \$1,080 per annum.
Charles M. Russell, machinist, \$1,080 per annum.
Roland O. Meade, machinist, \$1,080 per annum.
Wm. B. Ennis, machinist, \$1,080 per annum.
Chas. C. Jones, molder, \$1,080 per annum.
Chas. L. Eastwood, coppersmith, \$1,080 per annum.
Thomas Johnson, electrical machinist, \$1,000 per annum.

(Thereupon, at 1.40 o'clock p. m., the committee adjourned.)



[No. 15.]

**COMMITTEE ON NAVAL AFFAIRS,
Monday, February 9, 1914.**

The committee met at 10.30 o'clock a. m., Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. The committee will come to order.

Gentlemen, there were several Members of the House that at different times have expressed to the chairman a desire to appear before the committee to present matters in which they were severally interested, and I have said to them that after the committee had completed the hearings of the officers of the department we would notify them so that they could be here, and I have appointed this morning for the purpose, and gave notice to them. There are several here. There are two that notified me that on account of other engagements they could not attend this morning. We have with us this morning Mr. Hardy, Mr. Vare, and Mr. Holland.

Mr. Hardy, the committee will be pleased to hear such suggestions as you wish to make.

**STATEMENT OF HON. RUFUS HARDY, REPRESENTATIVE IN
CONGRESS FROM TEXAS.**

Mr. HARDY. Mr. Chairman, first I want to tender my apologies on the ground that I am not capable of giving any information to this committee that they do not already have, and with that brief apology I want to give the reasoning that influences me and submit some data that may be of interest.

My whole idea is this, that whether a man goes armed as he goes about the streets or not, it is probably advisable to keep a good shotgun in his house as a protection against burglars, and therefore I have been rather impressed with the idea that submarines, if they are what I understand they are, namely, practically defensive weapons in warfare and not very expensive either, would be an excellent investment for some of the war expenditures of our Nation.

I would like to submit along that line——

The CHAIRMAN. I will state that if there are any matters that you have that you do not care to take up the time to read you can insert them with your remarks and they will be printed with the hearings.

Mr. HARDY. I wanted to call your attention to an article from The Navy of April, 1913, a brief statement which I have marked, which will include all that I care about that, giving the British naval program, in which I wish to call particular attention to one paragraph, the last:

In addition to these it is proposed to build a certain number of small submarines for the purpose of coast defense. They will be of about the size of the A class, but will embody numerous improvements in offensive power.

This is a part of the British naval program.

I believe I have stated that the bill I introduced was a bill authorizing the building of a number of submarines for the Gulf coast. My understanding is that there have been submarines already authorized for the Atlantic and Pacific coasts, but none for the Gulf.

I want to call attention also very briefly to an article of July 15, 1912, from the New York Times. It reads this way—I will just leave this article and it may be incorporated in the printed proceedings.

The article referred to is as follows:

[New York Times, July 19, 1912.]

CAN NOT ESCAPE SUBMARINES—ADMIRAL WARD SAYS THEY CAN DESTROY BATTLESHIPS AT WILL.

[Special to the New York Times.]

NEWPORT, R. I., July 18.

The officers of the Atlantic Fleet are satisfied there is no protection from submarines under present conditions, because of the successful attacks made by the destroyers and submarines last Thursday and Friday nights in the vicinity of Block Island in the war games against the battleships.

The first and second divisions, with the flags of Rear Admiral Aaron Ward on the Florida and of Rear Admiral Cameron McRae Winslow on the Louisiana, with two groups of destroyers and two of the submarines were "destroyed" at will.

Admiral Ward said after the battle:

"The submarines picked us up whenever they chose to, but we could do nothing with them. Yet the screening of our destroyers was well timed and perfect."

"What will be the future plan of defense against submarines?" Admiral Ward was asked.

"We will have to run away from them," replied the commander.

Mr. STEPHENS. Mr. Chairman, may I interrupt the gentleman?

Mr. HARDY. Certainly.

Mr. STEPHENS. In providing for submarines we do not appropriate for submarines for any particular location, do we? In other words, we do not appropriate for submarines for the Atlantic or for the Pacific or for the Gulf.

The **CHAIRMAN.** We have not as yet, except in one bill there was a designation, I think, for submarines for the Gulf coast.

Mr. STEPHENS. Has that bill been passed?

The **CHAIRMAN.** Yes.

Mr. HARDY. My understanding was that there were some bills designating them for the Pacific coast and some for the Atlantic coast, and we thought that the Gulf coast ought to be in a like situation.

In that connection, my attention has been called to the fact that Admiral Farragut very successfully handled the situation on the Mississippi River and captured that whole section during the Civil War, and very easily; and the whole Gulf coast, without submarine protection, would be subject of easy attack. Possibly our friend over there at Santiago, the Spanish admiral—what was his name?

The **CHAIRMAN.** Admiral Cervera.

Mr. HARDY. Admiral Cervera might have performed the same feat.

I call attention also to a copy from the Berliner Tageblatt of March 13, 1913. This is quite an article, discussing the relative merits of the submarines and torpedo-boat destroyers. Among other things, he says:

In addition to these large submarines, small submarine boats are also to be built merely for purposes of coast defense. It is said that the new large submarine boat will be superior in size to the boats of classes E and F now in course of construction.

Class F has a displacement of 1,200 tons, with a speed of from 18 to 20 knots and an artillery armament consisting of two 7.6 centimeter guns. The most recently built British torpedo-boat destroyers have a displacement of from 700 to 950 tons and an armament of two 10.2 and two 7.6 centimeter guns. The German destroyers built during the last budget year have a displacement of 700 tons.

I think that article probably is worth incorporating in your hearings. The CHAIRMAN. Just put it in with your remarks.
(The paper referred to is as follows:)

[From the Berliner Tageblatt, Mar. 13, 1913. Translation. German.]

THE SUBSTITUTION OF SUBMARINE BOATS FOR TORPEDO BOATS.

When the *Matin* reported three years ago that the French minister of marine, Admiral Boue de Lapeyere, had stated in the French Parliament that his department intended to eliminate torpedo boats completely from the service and to confine itself in future to the construction of submarine boats, the report was given very little credit in our country. In its issue of April 9, 1910, the *Berliner Tageblatt* declared that it would only have reference to the elimination of the small type torpedo boats provided for coast defense, adding that although the latter could safely be intrusted to submarine boats, it would not as yet be possible to do without the torpedo-boat destroyer for service in the high seas, inasmuch as the art of submarine-boat construction was at that time not sufficiently far advanced to allow of such elimination. This opinion was subsequently confirmed. The submarine boat was at that time incapable of navigating the high seas under all conditions, and it could not, therefore, be substituted by the destroyer, at least for the time being. However, conditions are different now, when the first reports in British publications devoted to naval matters, disclosing the new program of naval construction, state that the impending discontinuation of the building of torpedo-boat destroyers, by reason of their being no longer required in view of the progress made in submarine-boat construction, must be considered as one of its most important factors. It is said that torpedo-boat destroyers will disappear and that they will be replaced with submarine boats which will far outstrip in size the most recently built submarines of classes E and F. The new type is to be a boat equal in size to the present destroyers and capable of submersion. It will be available for day and night attacks. Although the details for this new type of construction have not as yet become known, there is nevertheless reason to expect that the surface navigation speed will approach that of the torpedo-boat destroyers, that the artillery armament will be abundant, and that the radius of action will be larger than that of the torpedo-boat destroyers.

It is said that the new large submarine boat will be superior in size to the boats of classes E and F, now in course of construction. Class F has a displacement of 1,200 tons, with a speed of from 18 to 20 knots and an artillery armament consisting of two 7.6 centimeter guns. The most recently built British torpedo-boat destroyers have a displacement of from 700 to 950 tons and an armament of two 10.2 and two 7.6 centimeter guns. The German destroyers built during the last budget year have a displacement of 700 tons.

In addition to these large submarines, small submarine boats are also to be built merely for purposes of coast defense. Submarine vessels of the size and surface navigation speed of about 25 knots, now provided for in England, are certainly fit to enter into competition against the torpedo-boat destroyers available at the present time. The superior speed of the destroyers, which now, in fact, exceeds 30 knots, is counterbalanced by the capacity of submarine boats to disappear from view. It appears highly probable, therefore, that we shall in the very near future witness the disappearance of the torpedo boat, and that the submarine boat will become its sole successor in the same field of usefulness. The Navy, which has hitherto most energetically applied itself to the development of the most modern means of warfare, the submarine boat, regardless of financial sacrifices and loss of life, will be the one to derive the greatest advantages from the changed conditions which will result from the appearance of these new submarine fighting units, available for battle on the high seas.

In the Reichstag we have heard representatives Dr. Paasche and Erbesberger make some laudatory comments on our torpedo and submarine boats. The last-mentioned gentleman stated that we are not behind any other country in submarine boat construction. The honorable member has undoubtedly made a close study of the subject in reference to all the different navies. Did he obtain his information from an

unquestionable source? Did he make his inquiries regarding the displacement of our boats and that of foreign navies and in reference to the consequent fighting qualities, such as speed, etc.?

Mr. HARDY. I do not want to take up the time of the committee in reading extensively. In fact, gentlemen, I just wish to submit this matter to your good judgment with a few observations. While I am very much opposed to a great navy and all that, nevertheless I think fortifications are all well enough, and I believe that the submarine boats, which disappear from sight, are weapons that strike the enemy when he least expects it and against which an attacking fleet on our coast would be as helpless, and even more helpless, than it would be against harbor defenses, because the enemy might find out where those flanks are, and could not find out where a submarine boat was.

Mr. BROWNING. Mr. Chairman, I understand the Secretary's recommendation to be for 16 torpedo-boat destroyers and only three submarines.

Mr. HARDY. Along that line, it seems to me that you ought to reverse the proposition.

Mr. BROWNING. I was only reading the recommendation of the Secretary of the Navy to the committee of Congress.

Mr. TALBOTT. He recommends 16 torpedo-boat destroyers.

Mr. HARDY. From the Washington Evening Star of November 11, 1913, I find this article:

[Washington Evening Star, Nov. 11, 1913.]

The first step toward the development of the naval defense of the Panama Canal is about to be taken in the dispatch of the first division of the submarine flotilla from Guantanamo, Cuba, to Cristobal, Canal Zone. Part of the scheme of defense of the canal as planned by the Navy general board over a year ago was the use of submarines at each entrance to the canal. In the narrow channels of smooth water few battleships would dare run the gantlet of the five submarines which may be darting around below the surface in Panama Bay and in the approaches to Cristobal.

Gentlemen, I do not want to detain the committee, but it seems to me that there is an arm of national defense that ought to be in proportion to its costliness the most useful of all our equipment. A submarine, as I understand it, one of the class suited for coast defense more particularly rather than offensive measures, can be built for from \$250,000 to \$300,000. Its maintenance, for equipment and everything, from the statistics that I have been shown, amounts to about \$25,000 a year. I believe my bill proposes appropriating not to exceed \$500,000, but I think \$300,000, from all the statistics, is what they would cost. Five submarines such as I have spoken of would cost \$1,500,000, and the maintenance of them per annum would be about \$125,000. That is about a fifth of the cost of one battleship. Those five submarines would add to the defense enormously, and if they were placed as I have contemplated in the bill I have introduced, in the Gulf of Mexico, they would add to the strength inestimably of our Navy, and no navy could enter the Mississippi River if these five submarines were cruising, but hidden, under the waters, absolutely destructive when they reach the vessel, the vessel not knowing when it would reach it. Considering the inexpensiveness of them it seems to me, if we want to defend ourselves and do not want to exploit our vast military power, that such a weapon as the submarine is the weapon that we ought to be amply supplied with,

rather than weapons that would enable us to go out and inflict damage on the other party.

Particularly would that be the case if the contentions of certain military authorities are true—that we have a condition of absolute unpreparedness in the case of war with a strong nation. I do not propose to go into that before the committee, as to what our condition is; but those are the least expensive and the most effective weapons of defense, according to my reading and the authorities that I have; and some authorities I have been reading tend to indicate that England is abandoning largely the policy of torpedo-boat destroyers, which may be seen and thus destroyed, in favor of the submarine, which can not be seen and is equal, or almost if not equally, speeded.

If other nations are gradually abandoning the torpedo-boat destroyer and adopting the submarine, and I believe that a study of the question will show that they are, it seems to me that we should take the other tack and instead of increasing our torpedo-boat destroyers—the more expensive craft for defensive purposes—we ought to have more submarines and less torpedo-boat destroyers.

Mr. HENSLEY. May I ask you a question?

Mr. HARDY. Certainly.

Mr. HENSLEY. Do you realize that there is no pressure being brought to bear for the building of these submarines that you speak of; that the whole purpose is to build battleships?

Mr. HARDY. Let me state this, Mr. Hensley, that I think there could not be any likelihood of any great interest being involved in the building of submarines, for the reason that they are very inexpensive.

Mr. HENSLEY. That is very true.

Mr. HARDY. If it costs \$300,000 for a good defensive weapon, you can build five weapons for \$1,500,000, which would probably be enough for the Gulf coast. You can build 5 of them, or maybe 10, for the Pacific coast for \$3,000,000. You can build another 10 for the Atlantic coast for another \$3,000,000. That would require \$7,500,000 for submarines for the three coasts of continental America. Seven million five hundred thousand dollars would not be the cost of one battleship.

Mr. BROWNING. The reason I asked the question a while ago, this bill provides for the construction of eight submarine torpedo boats.

Mr. HARDY. Yes.

Mr. BROWNING. Is that eight submarines in addition to the three recommended by the Secretary, or is it your purpose to only build the eight?

Mr. HARDY. My purpose was that we believe that possibly there ought to be eight submarine torpedo boats navigating the waters of the Gulf.

Mr. BROWNING. Well, those eight boats you want built, you want all designated for the Gulf?

Mr. HARDY. That was the idea. But I am frank to say, in view of what the chairman said or what was said by the gentleman over here a while ago, that the torpedo-boat flotilla would not probably be confined to any one section, I am not so sure that the committee ought to act on any of these bills providing for the building of submarines for particular coasts, but they ought to authorize a given

number of submarines and place them where, in the discretion of the War Department, they ought to be, and yet there ought to be a kind of home section for some of these submarine boats.

The main thing I wanted to get at was that from all that I can read and all that I can see the submarine is par excellence the defensive weapon for a nation that wants to defend itself from attack and never expects to make an attack upon another nation.

Mr. STEPHENS. I understand and believe the submarine to be a most valuable weapon, but we have been told here in this committee that a submarine is practically helpless in rough weather, and, further, that they can only stay under the water for a limited time. If that kind of a statement is a fact, would you not think we seriously need the torpedo-boat-destroyers also?

Mr. HARDY. If that kind of a statement were without qualification and unquestionably true I think it would be very doubtful. I do not believe Great Britain would be gradually changing her policy and abandoning the torpedo-boat destroyer and adopting the submarine if that were true, and all these articles tend to show that the modern expert nations are abandoning the torpedo-boat destroyer and adopting the submarine boat.

Mr. STEPHENS. Are they not simply lessening the number being constructed and increasing the number of submarines?

Mr. HARDY. That is exactly what they are doing. They are not entirely abandoning the torpedo-boat destroyer, but they are apparently allowing the torpedo-boat destroyer to be displaced to a very large extent by the submarine. I would not say that we ought to abandon the torpedo-boat destroyer, but I just say that the big nations are doing that; they are leaning more and more to the abandonment of the torpedo-boat destroyers and substituting therefor the submarines.

Mr. STEPHENS. If I remember the statement made by Mr. Lee, it is as I have given it, and if that statement is true you would not want the Gulf coast to depend upon the submarines alone, would you?

Mr. HARDY. If that statement is true, that in bad weather they can not be relied on—and I want to say that I have not run across that statement and do not think it is referred to in any of these papers which I have left here which discuss the subject—we probably would not want to rely on the submarine alone. I would not make any such suggestion and have not made any such suggestion that we should entirely abandon the torpedo-boat destroyers. In other words, we would want to govern ourselves by what we learn from experience and experiments.

The CHAIRMAN. Mr. Hardy, may I call your attention to this suggestion: The suggestion which has been made to the committee was that perhaps a submarine of large dimensions, 1,200 or 1,500 tons, might be developed, and it was hoped to be developed, to supplant the torpedo-boat destroyer, so that it would be a boat of the same size as the torpedo-boat destroyer and would have the same sailing qualities, and, in addition, would have the submerging qualities, and it was not the small submarine but the large submarine that was to supplant the torpedo-boat destroyer.

Mr. BRITTEN. Mr. Chairman, this says that Great Britain is now building 44 destroyers and only 22 submarines; Germany is building 12 destroyers and 12 submarines; while we are building 16 destroyers

and 26 submarines. So that, apparently, we are building now probably 20 per cent more submarines than Germany or England, notwithstanding what the Navy says about the general program.

Mr. HARDY. Let me read you right along that line here what The Navy says under "New British naval program." One paragraph of it reads this way:

But the most interesting change will be found in the program of torpedo craft. The destroyer is to disappear. In her place—

Mr. BRITTEN. Pardon me there. That says "torpedo boat craft."

Mr. HARDY. Yes, it says:

In her place, submarine torpedo craft will be built, which will far exceed the E and F class in power.

The CHAIRMAN. That is what I called attention to a moment ago.

Mr. HARDY (reading):

They will, in fact, be destroyers capable of submersion, and, therefore, available for attack both by night and day.

That is the English naval program, and the question with me is if the submarine torpedo craft is to displace the present surface torpedo boat why should we continue to build them?

The CHAIRMAN. You will notice that the program is to build very large submarine instead of the small ones.

Mr. HARDY. And those are for offensive purposes.

The CHAIRMAN. Those are for coast defense. England, you know, is a little island that is surrounded and her local conditions are very different from ours.

Mr. HARDY. The reason I said they were for offensive purposes was because many of these papers say here that the submarines are of two classes, one larger and with greater speed and intended for offensive operations and the other is small, and intended for defensive operations. The vessels I was advocating are those that are intended for our coast defense, and it would not make any difference whether you could get them far away from the coast.

Mr. TALBOTT. They are all intended for coast defense.

Mr. HARDY. Yes, and the battleship is intended for coast defense. These papers try to define them. They say that the larger ones are more particularly weapons of offense, they are more expensive and might cost \$500,000 or \$600,000. The small ones are sufficiently large for mere coast defense, and cost from \$250,000 to \$300,000 to build and cost only \$125,000 a year to maintain. But they are not defensive weapons.

The point with me is that if this statement here that the torpedo boat destroyer is to disappear—and this is from The Navy, giving the British naval program, saying that the destroyer is to disappear—it seems to me that we ought to lay more stress on the defensive and build more submarines.

Mr. HENSLEY. Have you read the testimony of Admiral Vreeland on the question of the submarine, questioning the point brought out by Judge Stephens?

Mr. KELLEY. Your recollection is the same as mine.

Mr. HENSLEY. He qualified that in a way. He claimed that they made trips across a certain expanse of ocean with them.

Mr. STEPHENS. Extraordinarily hazardous.

The CHAIRMAN. Mr. Hardy, the committee has been very glad to hear you.

Mr. HARDY. Mr. Chairman, there was a little article here I would like to leave with you.

The CHAIRMAN. Just incorporate it in your remarks, if you desire.

Mr. HARDY. I will leave that article as a kind of discussion.

(The article referred to is as follows:)

MEMORANDUM AS TO THE SUPPLANTING OF THE TORPEDO-BOAT DESTROYER BY THE SUBMARINE TORPEDO BOAT.

In the last annual report of the Secretary of the Navy, among his recommendations for new construction for the coming year, he asks for eight torpedo-boat destroyers and three submarine torpedo boats. The wisdom of this recommendation may be questioned so far as the number of destroyers is concerned, in view of the revolution which is now taking place in the building programs of foreign naval bureaus, notably Great Britain. The British Admiralty has come to the conclusion that, owing to the steady development of the submarine in recent years by which increased speed, surface and submerged seagoing qualities, radius of action, and greater armament have been secured, the place formerly occupied by the destroyer has been gradually taken by the submarine. It has been found that this modern submarine can do the work of the destroyer with the enormous advantage of at the same time possessing invisibility, so that instead of waiting for the cover of darkness to steal forth, as the destroyer has to do, the submarine can make its attack in broad daylight.

That the elimination of the destroyer in favor of the submarine has already begun, there is ample evidence in the cable dispatches during the last few months discussing the plans of the British Admiralty.

In an article in the Naval and Military Record, a British service paper, published in London, which article was reprinted in "The Navy," published in this city under the auspices of "The Navy League," in the number appearing April, 1913, the following paragraph will be found in a discussion of the new British naval program:

"But the most interesting change will be found in the program of torpedo craft. The destroyer is to disappear. In her place, submarine torpedo craft will be built, which will far exceed the 'E' and 'F' class in power. They will, in fact, be destroyers capable of submersion, and, therefore, available for attack both by night and day. The details are as yet a secret, but it is safe to say that these craft will have a surface speed approaching that of the 'River' class of destroyer, that they will be well armed with quick-firing guns, and will have a greater radius of action than any destroyer afloat.

"In addition to these it is proposed to build a certain number of small submarines for the purpose of coast defense. They will be of about the size of the 'A' class, but will embody numerous improvements in offensive power."

That a similar revolution by which submarines are displacing destroyers is in progress both in France and in Germany is stated in an issue of the Tageblatt, a German service paper published in Berlin, the date being March, 1913. (See Tageblatt article.)

In view of the practice which is obtaining abroad, particularly in the British Navy, whose example we are always so quick to follow and which sets the pace in the matter of naval invention and naval policies generally, the wisdom of Secretary Daniels's building program, so far as it relates to destroyers and submarines, may be seriously questioned. It would appear that the wisest plan would be to go exactly opposite to his recommendation in reference to destroyers and submarines, so that there would be built but three destroyers and eight submarines of the most modern type.

As a result of the naval maneuvers, both in Great Britain and this country, it has been found that submarines naturally divide themselves into two classes—the offensive, meaning vessels of considerable surface speed, which can accompany the fleet on offensive operations, and defensive vessels of about 200 tons, which are particularly suited for coast-defense purposes. It may be stated that the last-named vessels are almost insignificant in cost, as they are not required, as stated, to be of great tonnage. These defensive submarines can be manned by an officer and five or six men, cost originally about \$250,000, and can be maintained and repaired for less than \$25,000 a year.

These coast-defense submarines, which can be provided at small cost, are particularly well adapted for the defense of gulf ports. Any repairs, supplies, etc., required for these boats could be provided at the New Orleans or Pensacola Navy Yards or the

Key West Naval Station. Submarine flotillas have no difficulty in making voyages between Gulf ports. The second division of the submarine flotilla has just arrived at the port of Galveston, Tex., from Key West, and will soon leave Galveston for New Orleans.

That condenses the whole matter.

I will leave these matters with you, and I want to thank the committee for your kindness and courtesy. Again I want to disclaim any great knowledge generally upon these subjects. I recognize my own limitations.

(The following was ordered printed in connection with Mr. Hardy's remarks:)

[The Navy, April, 1913.]

FOREIGN NAVIES.

GREAT BRITAIN—NAVAL BUDGET.

The revised estimates of the naval budget have increased the amount to be asked for to \$271,000,000.

NAVY LEAGUE PROGRAM.

The British Navy League is advocating a program of six new capital ships, in order to insure without question the minimum of 60 per cent superiority over the German fleet. In approving of this, Mr. Yerburgh says:

"Our program of new construction is not making good the expressed intention of the Admiralty to maintain a 60 per cent superiority over Germany in dreadnaughts. The league, which succeeded in wringing those extra dreadnaughts from a hesitating and unwilling government in 1909, must bring all the pressure it can command upon the present government to secure the laying down of six ships this year, and the commencement of all the ships of the year's program at the earliest possible date. Our battle-cry must be, 'We want six, and no tricks.'"

NEW BRITISH NAVAL PROGRAM.

The program of armored ships will consist of five, as previously foreshadowed. The five will be of a hybrid type, neither battleship nor battle cruiser. They will be vessels of about 28,000 tons, with an armor belt of 13½ inches, a legend speed of 25 knots, and an armament of eight heavy guns, 16-inch or 16.25-inch. The amalgamation of type has been long approaching. In these vessels we shall have arrived near the ideal of Lord Fisher's "New Testament" ships.

Next, there will be eight light-armored cruisers, about 300 tons heavier than those laid down last year. These will be armed with four 6-inch and eight 4-inch guns, sufficient to knock out any light cruiser yet designed by a foreign power.

But the most interesting change will be found in the program of torpedo craft. The destroyer is to disappear. In her place submarine torpedo craft will be built, which will far exceed the E and F class in power. They will, in fact, be destroyers capable of submersion, and, therefore, available for attack both by night and day. The details are as yet a secret, but it is safe to say that these craft will have a surface speed approaching that of the *River* class of destroyer, that they will be well armed with quick-firing guns, and will have a greater radius of action than any destroyer afloat.

In addition to these, it is proposed to build a certain number of small submarines for the purpose of coast defense. They will be of about the size of the A class, but will embody numerous improvements in offensive power.

The CHAIRMAN. Mr. Vare, I think you desire to present some matters to the committee.

STATEMENT OF HON. WILLIAM S. VARE, MEMBER OF CONGRESS FROM PENNSYLVANIA.

Mr. VARE. Mr. Chairman, I want to avail myself of the opportunity to appear before the committee, representing as I do in Pennsylvania what is the first congressional district, or the great Philadelphia Navy Yard district.

There are several contemplated improvements under consideration, and quite large sums have been asked from the Federal Treasury to put these improvements into execution. We do not come to the Federal Government for appropriations without having acted ourselves first as a municipality and second as a State.

The city of Philadelphia is now constructing a boulevard leading to the Philadelphia Navy Yard at a cost, when completed, of \$2,500,000. They are improving a great park comprising 300 acres of land, at an approximate cost of \$3,000,000. They have recently entered into an agreement with the different railroads whereby they will jointly spend approximately \$20,000,000 for improvements in the immediate vicinity of the Philadelphia Navy Yard, and, in fact, adjoining the yard. The Pennsylvania Legislature, at its last session, adopted a resolution calling for a change in the constitution whereby they will be enabled to spend \$25,000,000 in Philadelphia in close proximity to this Philadelphia Navy Yard. The city of Philadelphia, in order to encourage the Federal Government, originally gave this site of more than 900 acres—to be exact, 923 acres—at a nominal cost of \$1. We those days recognized and felt was a location second to none in the country, whereby there was an opportunity for the building of a great reserve basin, the only one of its kind in fresh water, I believe, at any point.

The CHAIRMAN. May I ask a question for my own information, Mr. VARE?

Mr. VARE. Certainly.

The CHAIRMAN. At the time that this land was deeded to the Government it was largely swamp land, was it not?

Mr. VARE. Some parts of it were swampy, but the material with which it was filled in was taken from the channel.

The CHAIRMAN. That is what I wanted to get at.

Mr. VARE. And therefore the Government itself dredged out the channel.

The CHAIRMAN. The Government itself dredged out the channel, did they not, and emptied it on this land?

Mr. VARE. The Government itself dredged out the channels and got a cheaper price for dredging by reason of the Government having these low lands on which to waste the material taken from the channel. In other words, had the Government not had this as a dumping place for that material they would have had to have paid more for the dredging of the Delaware River. Therefore the filling in virtually never cost the Government a dollar.

There are several propositions in line with the proposed improvements which I want to call special attention to. In the first place, I am here to back up and corroborate in every way and on every opportunity my colleague, Congressman Lee, in his desire to have a 1,700-foot dry dock located in the Philadelphia Navy Yard. It is not my purpose to take up the time of the committee in referring to very many detailed advantages. I will, however, with your permission, leave this short statement in connection with that part of it.

(The paper referred to is as follows:)

ARGUMENTS FOR DRY DOCK.

With reference to Representative Lee's bill for the establishment of a dry dock, I wish to point out that if the Naval Affairs Committee is desirous of effecting real economy of expenditures the dock can be built at League Island much more econom-

ically than at any other point. The source of supplies is excellent. Labor conditions are particularly advantageous.

As most of the members of the committee have visited the yard, I need not tell you of its enormous size, and the fact that it could embody many of the industries of a good size city without being crowded.

The navy yard is in my district and I am thoroughly familiar with conditions there. You could build a dry dock there which could accommodate any ship of the Navy, built or building, and any ship could get up the river and into the dock without any difficulty. It would really be to the benefit of the whole country to put the dry dock at the Philadelphia Navy Yard, and ships going to that yard will be fully protected and incidentally will be able to float in a fresh-water basin, which naval experts recognize as a great advantage.

I think the position taken by Mr. Lee is economically sound and both from a strategic and geographic point of view the dry dock should be located on the Delaware.

As one engaged in and closely associated with large construction works and being familiar with this territory—I was born within a mile of the Philadelphia Navy Yard and know every foot of the territory—I do not hesitate to say from my experience there is no place in this country that furnishes a better opportunity for economy in connection with a dry dock than does Philadelphia.

Mr. TRIBBLE. You spoke about fresh water. What is the advantage of fresh water in a navy yard.

Mr. VARE. The advantage of fresh water is that there is no opportunity for the gathering of barnacles and other things that get on the bottoms of vessels, and even when ships have been for a long term in salt water, by transferring them to fresh water often they thoroughly clean themselves without cost.

Mr. STEPHENS. Mr. Vare, was this 923 acres of land conveyed to the Government by the city of Philadelphia or by the State of Pennsylvania?

Mr. VARE. By the city of Philadelphia, and absolutely without cost, aside from the nominal consideration of \$1.

Mr. STEPHENS. Were there any other conditions imposed on the Government than the payment of the \$1?

Mr. VARE. Absolutely none.

Mr. STEPHENS. Were there any implied conditions?

Mr. VARE. Absolutely none implied, with this exception, that the people who at that time were in charge of the affairs recognizing the splendid opportunities, the splendid possibilities for a great advantage to the Federal Government, deeded this land for a great navy yard.

Mr. STEPHENS. Was there any condition that the Government should build so many manufacturing plants or employ so many men, or anything of that kind?

Mr. VARE. No, sir; it was given to the Government without condition, of course, having in mind that the Government would naturally build a larger navy yard. The Government had a navy yard in Philadelphia, which we did not think was adequate, and we believed that this lowland would be of great value to the Government.

Mr. STEPHENS. Then, there was rather an understanding but not an agreement?

Mr. VARE. Absolutely no agreement excepting these people in those days naturally having absolute faith in the Government, and knowing that the Government was always quick to take advantage of opportunities for economy and efficiency, this site was selected as being the most advantageous site for navy-yard purposes.

I have a bill before the House, which I have presented after consulting with the Secretary of the Navy, for constructing twin ways, the estimated cost of these twin shipways and for supplying the necessary equipment being \$50,000.

[H. R. 6747, Sixty-third Congress, first session.]

A BILL Providing for additional equipment at the Philadelphia Navy Yard.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the sum of \$950,000 be, and it is hereby, appropriated for the purpose of constructing twin ways and supplying other equipment necessary for the building of battleships and other war vessels at the Philadelphia Navy Yard.

SEC. 2. That the Secretary of the Navy be, and he is hereby, authorized to enter into contracts for supplying the equipment and paraphernalia necessary to the construction of battleships and to put the Philadelphia Navy Yard in such condition that ships of war may be built there.

The Government's shipbuilding plant at Brooklyn is overworked, and it is inadequate to meet the demands made on it for Government shipbuilding plant. If this policy of economy, a policy which the present administration has said on many occasions is to be carried out, there ought to be special consideration given to this proposition of building shipways. The department recognizes that by having its shipbuilding plant there they will be able to hold in check what they sometimes refer to as the shipbuilding trust. If that policy is to be carried out, the policy of having their information at first hand, there is no place in the country where the same opportunities offer themselves for material and for labor. The Delaware River has always been known as the great shipbuilding center of the country; they have great transshipyards there of the New York Shipbuilding Trust. The result is, whether for purposes of competition or for purposes of restriction of what some persons say is an excessive cost, certainly there could be no question of the advisability of making an appropriation for the shipbuilding.

Mr. ROBERTS. Do you object to going into the items of cost of building twin shipways—going into the details of it?

Mr. VARE. I have not got the details.

Mr. ROBERTS. What is the estimate of the probable cost?

Mr. VARE. The estimate of \$950,000 was taken from the Philadelphia Navy Yard. I got that from the officials at the Philadelphia Navy Yard in the latter part of last year.

Mr. ROBERTS. Do you know whether that contemplated additional buildings to be used in connection with the shipbuilding?

Mr. VARE. This contemplates twin shipways. That would be two battleships of the largest type being erected at one and the same time and provision for the crane. My opinion is that the buildings are there now.

Mr. ROBERTS. Do you contemplate one or two ways?

Mr. VARE. Well, I am not familiar, but that is included—

Mr. ROBERTS (interposing). The reason I asked the question is because \$950,000 seems to be a very large estimate for the construction of slips and ways and one or two cranes. My recollection is that the ways and crane in the New York Navy Yard cost less than \$300,000. They have only one launch way.

Mr. VARE. This \$950,000, or, to be exact, \$915,000, was the figure for what they regarded the cost of the twin shipway and of the necessary equipment.

Mr. ROBERTS. That is why I am asking you if you contemplate these additional buildings, because the New York yard was equipped with ways and crane at about \$300,000. If that is the cost of one launch way and crane, it would seem to me that \$600,000 ought to put in two ways and two cranes such as you want in Philadelphia, and I can not see where the extra \$350,000 comes in.

Mr. VARE. Only to the extent that I assume that these experts have probably added possibly some later ideas. It has been some years since those shipways were completed.

Mr. STEPHENS. Mr. Chairman, I suggest that Mr. Vare be given an opportunity to look that up and be allowed to put it in his hearings.

Mr. ROBERTS. I wish you would, Mr. Vare.

Mr. STEPHENS. There was a Government navy yard at Philadelphia before the 923 acres was deeded to the Government?

Mr. VARE. Yes, sir.

Mr. STEPHENS. Was the old navy yard adjacent to the 923 acres?

Mr. VARE. No, sir; the old Government yard was, I would say, 5 miles distant from the new site.

Mr. STEPHENS. Was the old one abandoned?

Mr. VARE. It was abandoned. The Government sold the property to the Pennsylvania Railroad.

Mr. STEPHENS. How long ago was this transfer of the 923 acres made?

Mr. VARE. It was about 40 years ago.

Mr. STEPHENS. Do you remember the valuation placed upon the ground at that time?

Mr. VARE. It is estimated at \$10,000,000.

Mr. STEPHENS. Yes; but I mean then.

Mr. VARE. I have no figures; no, sir.

Mr. STEPHENS. I would like you, if you can get that, to get the estimate of its value at that time and put it in the record.

Mr. BITTEN. While you are doing that you might also give the amount that the Government received for the original site from the railroad company.

Mr. TRIBBLE. Mr. Chairman, I would like to ask the gentleman a question.

I would like to know what you have to say in regard to the construction of this navy yard there, with regard to the equal distribution of the appropriation of money from the Government among the different States. What have you to say about that?

Mr. VARE. I would say some years ago the Republicans used to divide the appropriations on what was called log-rolling and, some said, pork-barrel distribution. I am speaking of the whole proposition of dividing the money of all kinds around among the different parts of the country. My thought was that in these advance days greater consideration is given to the policy of economy. I am presenting this bill with the idea in mind of calling the attention of the country to what I think is an opportunity for the department to carry out this policy of economy.

Mr. TRIBBLE. Do you believe that all the navy yard ought to go to one place? Do you believe that all the appropriations ought to go to one locality?

Mr. VARE. I do not mean to say that beyond putting the policy of economy and efficiency into practice Pennsylvania ought to get these

appropriations; but I would certainly say that if there are two propositions before the committee for a dry dock and it was said that there were greater opportunities for efficiency of service and benefit to the Government in one place than in the other, I should say that the place that offered the greater opportunities for efficiency certainly ought to be given consideration first. If there were two propositions to build additional shipbuilding plants I would say that the proposition which had the most merit in it from the standpoint of efficiency and economy ought to be given first consideration.

I have a proposition for a foundry.

[H. R. 12313, Sixty-third Congress, second session]

A BILL Appropriating \$500,000 for the erection and equipment of a central iron, brass, and steel foundry for the Navy Department at the Philadelphia Navy Yard.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Navy be, and he is hereby, authorized to select a suitable site within the limits of the Philadelphia Navy Yard for the erection and equipment of a central iron, brass, and steel foundry, in accordance with the recommendation of the board of inspection of shore stations.

SEC. 2. That the Secretary of the Navy shall cause a suitable building or buildings to be erected within the Philadelphia Navy Yard on the site which shall be set aside for that purpose, and he is hereby authorized and directed to contract therefor in the same manner and under the same regulations as for other contractual work of the Navy Department.

SEC. 3. That the Secretary of the Navy is hereby authorized to purchase for said building or buildings the necessary equipment for a central naval foundry.

SEC. 4. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$500,000 for the purpose of erecting the buildings and installing the equipment necessary for a central iron, brass, and steel foundry.

A central iron, brass, and steel foundry, based on the report of the Navy experts, and I would say that if there are two propositions for a naval foundry or the central foundry for the Atlantic coast I would say that the proposition which had the most merit in it should be given first consideration.

MR. ROBERTS. You mean an armor-plate foundry?

MR. VARE. No; I mean a central iron, brass, and steel foundry.

THE CHAIRMAN. The board, in speaking of the foundry conditions existing over the country, have suggested that there ought to be a central foundry, but the department has not submitted any recommendation on that subject.

MR. TRIBBLE. I would like to inquire what your views are in regard to concentrating all of these works at one place, with a view of economy and efficiency.

MR. VARE. My theory is that possibly in private enterprise there has been great concentration, in many places to the benefit of the community where the concentration has taken place, in the line of doing the greatest good to the greatest number.

MR. TRIBBLE. Do you not believe that the same economy and efficiency could be obtained by concentrating the works of the public as could by concentrating private industry?

MR. VARE. By way of illustration, in line with the proposed armor-plate plant, the three great plants of the country now are located in Pennsylvania—virtually the only three great plants; that is, the Pittsburgh steel plant, the Carnegie plant, and one other—the Bethlehem plant. They are located in Pennsylvania, not because Pennsylvania is particularly a greater State than some other States,

although I think it is one of the greatest States in the Union—but they are located there because of the natural supply and labor being there. You can not take the natural resources of Pennsylvania away from it and place them in some other part of the country. Therefore these men who are in business for the purpose of enriching themselves select Pennsylvania for these great plants because the supply is there and the labor is there.

If this policy of efficiency and economy, which the administration has been advocating, is to be followed, if they are to be enabled to place a check, as it were, on what some people term a monopoly, and some of us term, possibly, an overcharge, by lack of competition; if they are going to put a check on them by having a plant of their own, the Government, in order to successfully carry out its purpose, must erect that plant where there can be the greatest economy and the greatest efficiency.

MR. WITHERSPOON. Mr. Vare, are you speaking about the policy of the present administration for economy?

MR. VARE. Yes, sir.

MR. WITHERSPOON. I would like to ask you to tell us what administration has ever advocated or practiced any economy in this country.

MR. VARE. I was under the impression that the present administration had rather specialized on the desire to reduce expenditures.

MR. WITHERSPOON. Have we not spent more than the Republicans in every department of the Government?

MR. VARE. That is a matter for you to answer, sir.

MR. WITHERSPOON. I want to know where that policy comes from.

MR. BRITTEN. Mr. Vare, along with your argument of economy and efficiency, would you advise this committee to be guided very largely by the views of the experts of the Navy Department?

MR. VARE. I would say that where the experts of the Navy Department are so absolutely and positively right their views ought to be taken.

MR. BRITTEN. They have advised us or recommended the building of a dry dock at Norfolk.

MR. VARE. I qualified my previous answer by saying that if the department was positively and unquestionably right. [Laughter.]

Some gentleman inquired about the difference between the armor-plate foundry and the central foundry. I think it was probably Mr. Roberts.

MR. ROBERTS. I had not heard of the foundry idea.

MR. VARE. This proposed central foundry is in response to the report of the Navy Department. If the committee does not mind I will read it. It is only a short statement.

CENTRAL FOUNDRY ARGUMENTS.

In response to reports of the Navy Department, I introduced the bill, providing for the establishment of a central foundry at the Philadelphia Navy Yard.

Some of the experts of the department made a careful inquiry as to the cost of such a foundry and concluded that \$500,000 would cover it. The Navy Department board which inspected the Philadelphia Navy Yard recommended that it was absolutely necessary to provide increased foundry facilities at Philadelphia.

In addition to this special report the board which investigated the naval foundry situation in all the yards of the country favored Philadelphia over all other cities. It was pointed out that the difficulty and delay experienced in obtaining turbine castings and large steel castings is one of the main obstacles in the ways of material increases in speed of construction of naval vessels.

In the official report of the board it was stated that the naval inspectors stationed at the various shipbuilding yards fully realize the number of steel castings that are frequently rejected in obtaining one that is satisfactory in character. The time required to manufacture certain castings, and as some of the principal castings can not be procured from private concerns within six months, the needs of the fleet demand that the Navy should possess a foundry that would be certain to give preference to naval work.

Because of its nearness to the private shipbuilding plants and its closeness to the source of the raw materials and the kind of labor that is required, the Philadelphia Navy Yard was designated by the board as the place where the naval foundry should be located. It was pointed out in this report, which is now on file in the Senate Naval Affairs Committee, that the yards which merited serious consideration for the location of the central foundry were Boston, New York, Philadelphia, and Norfolk. The naval officers who signed the report were J. R. Edwards, A. W. Stahl, and G. R. Evans, and after stating that considerable was required for the purpose of the proposed central foundry, they pointed out that the available space in the Boston and New York yards was insufficient, adding:

"The area required is, however, available at Philadelphia and Norfolk, and between these two yards the choice should largely depend on their comparative proximity to the places where the construction and repair work of our ships is likely to be carried on, on the nearness to the sources of material, on their general freight facilities, and on the character of the labor supply in the vicinity. Taking all these points into consideration, as well as the fact that Philadelphia is not only one of the great iron centers of the country, but is also within a few miles of leading steel foundries, the Philadelphia Navy Yard would seem to be the logical location for the central iron and steel foundries of the Atlantic coast."

Mr. BROWNING. Will the gentleman permit a question?

Mr. VARE. Yes.

Mr. BROWNING. Is that the Shore Station Board or the General Board?

The CHAIRMAN. That is the Shore Station Board.

Mr. VARE. This is the Shore Station Board, composed of Mr. Edwards, Admiral Stahl, and Admiral Evans.

Mr. BROWNING. Those men are in active service?

Mr. VARE. All of them.

Mr. BROWNING. They also recommended a dry dock for—

Mr. HENSLEY (interposing). Mr. Vare, you do not mean to say that you would expect this committee to just swallow anything and everything dished out to it by these so-called experts of the department, do you? We ought to exercise our own judgment to a certain extent on these questions.

Mr. VARE. I do not expect you to swallow anything you do not think is right.

Mr. HENSLEY. We ought to be presumed to have some judgment and to exercise it in connection with these propositions.

Mr. VARE. On the other hand, as a business man in Philadelphia, when I want to hire an architect to build a building I get an architect; I do not put my judgment up against the experience of an architect.

Mr. WITHERSPOON. Do you ask the architect whether you have money enough to erect the building?

Mr. VARE. If I did not have the money I would not employ the architect.

Mr. WITHERSPOON. Then you do not employ him until after you have determined the question whether you are going to do a thing, do you?

Mr. VARE. Sometimes I anticipate. Some of the most successful business enterprises have been brought about by anticipating—looking into the future.

Mr. BROWNING. I would like to ask a question.

Of course, the gentleman understands that the General Board simply makes recommendations and that the committee acts according to its own light. The gentleman also knows that last year when the Secretary of the Navy appeared before this committee, in answer to a question of the chairman as to where the dry dock should be located on the Atlantic coast, said he would leave that to the judgment of the committee. The committee, in voting on the project, voted for the dry dock to go to Philadelphia, 13 to 5, so that the General Board simply recommends. This year the General Board has recommended four battleships, but that is a matter for the committee to decide.

Mr. VARE. I so understand; that the final conclusion of this proposition rests with the committee.

Mr. ROBERTS. Does not your central foundry bill do away with the foundries in all the yards on the Atlantic coast?

Mr. VARE. My theory is that there are very many large castings which the Government at the present time can not get out satisfactorily and they want one large central plant to secure these extra large castings.

Mr. ROBERTS. And would still run the other foundries?

The CHAIRMAN. I will say for the benefit of the committee that the Secretary sent a copy of the report, which embraces a multitude of things, with the express stipulation that the department had not considered them and did not submit them with any recommendation, pro or con, but simply that the committee might have in its files a copy of the report.

Mr. ROBERTS. Is that in print?

The CHAIRMAN. Yes; the secretary of the committee tells me it has been printed. That report states that this central-foundry project is not to do away with or to supplant the foundries already existing in the shops.

Mr. BROWNING. I would like to ask one question: Which do you consider of first importance, the central foundry or the 1,700-foot dry dock?

Mr. VARE. My answer to that is that I am for the dry dock first. My idea in submitting this foundry proposition is that when the committee decides that they will go into that branch of the business I simply would like to have Philadelphia considered along with the other cities.

In further answer to my colleague, Mr. Browning, from New Jersey, the dry dock is one proposition. I submit it has no connection with the building of ships. I repeat again, if it is the thought of this committee and the policy of the department to increase the number of governmental shipways, and that is their policy to show the country that they can build ships possibly cheaper than those they now buy from the different shipbuilding companies, then I submit the splendid facilities that Philadelphia affords for that purpose.

In order that the committee will not misconstrue the matters that I am discussing, three or four propositions being submitted at the same time, the bill that I have submitted in connection with the armor-plate proposition provides for the appointment of a board of survey for the purpose of locating a suitable site at or near Philadelphia.

Mr. BROWNING. I have got one just like it, too.

Mr. VARE. What is the number of your bill, Mr. Browning?

Mr. BROWNING. The clerk can tell you the number.

The CHAIRMAN. Let us expedite the hearing. Is there anything further, Mr. Vare?

Mr. VARE. I should like to submit this in connection with the armor-plate proposition.

The CHAIRMAN. It will be printed with the proceedings.

(The paper is as follows:)

THE SURVEY FOR ARMOR-PLATE FACTORY.

The bill which I have introduced for the appointment of a board of survey to go to Philadelphia to inspect various sites for an armor-plate factory simply responds to the desire of the Navy Department that there should be established a Government armor plant. It is with no sectional feeling that I urge the claims of Philadelphia for this improvement. Secretary Daniels has made a very exhaustive argument in favor of establishment of a Government armor-plate plant, and I think that it will be conceded that inasmuch as the three great private armor-plate manufacturers of the country to-day are located in Pennsylvania, the Government itself should locate there. Private interests have not picked Pennsylvania for sentimental reasons.

The Midvale Co. did not go to Pennsylvania because of a desire to please the people of that State, nor did the Carnegie Co. nor the Bethlehem Co. They went to Pennsylvania because it brought them into close proximity with an unparalleled labor market and the principal ore supplies of the United States, if not of the world. These three concerns have invariably been the bidders for the armor contracts of the Navy Department, and one or another of them has invariably won the contract.

Secretary Daniels has made it quite plain that he believed that these companies have worked in collusion and that there is no real competition.

In addition to effecting economies, the Secretary's motive in urging the establishment of a Government plant is to break up this alleged monopoly. Would it not then be the part of wisdom to place the armor plant in the most advantageous location? If the private companies have found Pennsylvania the best place with a view to labor conditions and raw materials, the Government may well follow suit. So that there may be no question of any favoritism I have proposed that a board of survey, composed of high officials of the Navy Department, be selected to go to Philadelphia and pick out the best site near the navy yard, or even within the yard.

[H. R. 9187, Sixty-third Congress, first session.]

A BILL Providing for the appointment of a board of survey for the purpose of selecting a suitable site for a naval armor plant at or near Philadelphia Navy Yard, League Island, Pennsylvania, and submitting an estimate of the cost thereof.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Navy be, and he is hereby, authorized and directed to appoint a board of three officers of the United States Navy, the presiding officer of which shall be a rear admiral on the active list, who shall be directed to make immediate examination of sites at or near the Philadelphia Navy Yard, League Island, Pennsylvania, which would be suitable for the establishment of a plant for the manufacture of naval armor and armor plates; and said board shall report in writing to the Secretary of the Navy as to the suitability of the sites it may have examined, taking into consideration the factors of original cost of plant, cost of manufacture, facility of distribution, and so forth; and said board shall submit an estimate of the cost of acquisition of such site as it may recommend, together with an estimate of the cost of construction and complete equipment of a naval armor plant of sufficient capacity to furnish armor and armor plate to naval vessels, based upon the average annual requirements during the ten years last past.

Sec. 2. That the Secretary of the Navy shall, upon receipt of the report of said board, transmit it to the Speaker of the House of Representatives, together with his recommendations thereon.

ARGUMENT FOR SHIPWAYS.

The bill which I have introduced for the construction of shipways at the Philadelphia Navy Yard will result in economies which will more than pay for itself within a year. In the estimate submitted by the Navy Department there is recommended

an appropriation of \$200,000 for beginning work on the shipways which have been advocated for the Philadelphia Navy Yard, but I believe that if the sum provided in my bill, \$950,000, were appropriated at once the Government could start work on battleships at the Philadelphia Navy Yard without any delay.

It is my understanding that Secretary Daniels intends that shipways for the construction of large battleships should be established at League Island eventually, but that the ways can be so constructed at the Philadelphia yard that smaller types of vessels might be built there. There is no doubt that there is need for this improvement. The Brooklyn Navy Yard has more work than it can attend to, and all the experts of the Navy have agreed that League Island is the proper place for the shipways requested in the annual report of the Navy Department.

The Secretary of the Navy stated in his report that his attitude is for economy and has shown a commendable desire to avoid all useless expenditures. He admits frankly, however, that a shipway in Philadelphia is absolutely necessary. The report of the General Board, which accompanies the report of Secretary Daniels, points out that the consensus of opinion of the various commandants and chiefs of bureaus strongly favor the adoption of a well-defined policy of shipbuilding for our navy yards. In view of this general feeling that the Government should build more ships itself, the Navy Department proposes to undertake the construction of coal barges, oil and water barges, tugs, and such other small vessels as may be within the capacity of the several yards as occasion may demand.

In the report of the General Board the following paragraph occurs:

"With the authorization by Congress of appropriate funds it is hoped to equip an additional yard with the requisite facilities for battleship construction."

It was my understanding that this paragraph referred directly to the Philadelphia Navy Yard, and this was shown by the fact that Secretary Daniels submitted in the regular estimates an item of \$200,000 for beginning work on a shipways at the Philadelphia Navy Yard.

I wish to point out that there would be real economy in having an additional yard for shipbuilding purposes in order that there might be friendly competition with the Brooklyn yard, which now has a monopoly on this Government work. The fact that the leading private shipbuilding yards of the country are located on the Delaware River is evidence that no better location could be found for a Government shipbuilding plant. I would like to read from the report of the special board appointed to inspect conditions at the navy yard in Philadelphia, which, with reference to building facilities said:

"The Philadelphia Navy Yard has not been especially developed for shipbuilding purposes although the Delaware River is the center of that industry on the Atlantic coast. The situation possesses important advantages for such construction, since the yard not only contains suitable space for carrying on such work in an efficient, expeditious, and economical manner, but is likewise most favorably located for procuring labor material particularly essential to shipbuilding.

"A site south of the machine shop for a new building ways has been reserved for some years but this site is limited in length and probably could only be of efficient use to vessels of less than 500 feet in length. In order to prepare the yard for building battleships of the largest type a site for a building ways with suitable crane facilities, should, however, be reserved to the west of the proposed additional dock.

"The shops of the machinery division, with the exception of foundry facilities and some heavy machine tools are well equipped and located for new construction on either the proposed or the new site."

After describing the possibilities of the yard for shipbuilding purposes the board stated that it considered the following as essential steps to preparing the yard for shipbuilding purposes:

"A site for a building slip to be reserved to the west of the proposed dry dock, the preparation of the ways to be begun in such a manner as will permit, without future changes, the building of the heaviest type of battleships. The construction and equipment to include suitable cranes so installed as to permit of ready extension to serve the entire ship.

"The purchase and installation of heavy machine tools, and the extension of foundry facilities."

Here then we have a special board favoring the building of ships at the Philadelphia yard in addition to the recommendation of the general board which investigated all the yards and still reported in favor of the project at Philadelphia, and finally the estimate of Secretary Daniels himself, who felt that an appropriation of \$200,000 should be made to begin the work. There has been no contest over this project because it has been worked out by the experts of the Navy Department themselves, and they are unanimous in declaring the Philadelphia Navy Yard to be the proper

location. The project is not designed to benefit the city of Philadelphia, but to benefit the Navy Department. It is a Navy Department project, and I feel confident that this committee will regard it as such and provide the necessary appropriation.

In conclusion, I wish to say that so far as the facilities for getting labor, materials, and everything else needed in the construction of battleships, Philadelphia stands in an unequalled position to give the best service to the Government, as it shows by the fact that the principal shipbuilders of the country have located on the Delaware almost within a stone's throw from the League Island yard.

COMMITTEE ON NAVAL AFFAIRS,

Wednesday, February 11, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. Gentlemen of the committee, we will hear this morning Mr. Holland, of Virginia, who desires to address the committee in reference to the dry-docking facilities at the Norfolk Navy Yard.

STATEMENT OF HON. E. E. HOLLAND, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA.

Mr. HOLLAND. Mr. Chairman and gentlemen of the committee, I thank you very much for this opportunity of laying before you Norfolk's claims to the proposed dry dock. Virginia has no representative on your committee and on this account may be placed at some disadvantage. Your permission, however, to appear before you and discuss Norfolk's case with you, as best I can, is an evidence of your desire to be fair and impartial in your consideration of it, and to hear all that can be said on either side before any conclusion is reached. If you will permit me first to present our case and will then ask me such questions as you may desire me to answer, I shall very much appreciate it.

This is not, and should not be made, a sectional or political question. The fact is I had hoped that the time had come when we could consider questions of this kind in a spirit of broad patriotism and solely with reference to the good of the Navy and the good of the Nation. I had believed that the time had come when the narrow sectional spirit of other days had been abandoned, and when, with clearer vision, we could see beyond the limits of our own particular States and find need for improvements not to be located therein. Politics and sectionalism should never be allowed to interfere with our naval progress.

I am willing that this committee shall impartially consider the particular merit of each yard, and then vote for such improvements at each yard as will best promote the interest of the Navy and of the Nation, and without reference to the location of the improvement or to the interest of any particular individual or to any particular State therein. I have a strong conviction that patriotism demands that we shall follow such a course.

I wish that it shall be distinctly understood that I am not opposed to appropriations required for improvements actually needed at stations other than Norfolk. I am absolutely unwilling that my desire for needed improvements at the Norfolk yard shall in any way influence me to oppose needed or even similar improvements at other yards. I am opposed, however, to the mistaken policy of developing

any yard without reference to its adaptability for the purposes for which its location best suits it. Such a policy has been too long followed, has resulted in large and unnecessary expenditures, and has not contributed to the military value or usefulness of the yards. In the interest of economy, as well as in the interest of the efficiency of the Navy, such a policy ought to be abandoned.

Everybody knows that every yard is not suitably located for ship-building, and that every yard is not suitably located for ship docking, and that it is a useless waste of money to provide such equipment and facilities at points where they will not be needed or used for such purposes.

Hastily considered extensions, and without reference to any particular plan or purpose, ought not to be made, and the yards ought to be developed so as to make them of most value for general navy-yard work, and at the same time of most service to the Navy. If you will follow some well-matured plan, a practical and logical development can be had, the expenses of operation lessened and the actual service of the yards increased. So far as I am concerned, I will say to you, in all frankness, that I do not ask for any improvements at the Norfolk yard that will not contribute to the public good and to the greater efficiency of the Navy.

Having made this general statement of my position with reference to navy-yard improvements and extensions, I desire now to submit to you for your consideration the reasons which have convinced me that certain improvements ought to be made at the Norfolk yard.

I can say nothing in favor of the Norfolk Navy Yard that has not repeatedly been said by Army and Navy experts, men whose trained judgment ought to be entitled to your confidence and to your serious consideration.

For the past 100 years every Secretary of the Navy and every commandant of the yard, with hardly a single exception, has made recommendations for its improvement and extension, and naval boards appointed from time to time to examine and report on its condition have repeatedly declared "that no yard belonging to the United States from its geographical position is more important."

As early as the year 1869, before the passions of the great Civil War had subsided, and when the area of the Norfolk yard was smaller by 272 acres than it is to-day, a naval board composed of Rear Admiral Stringham, Admiral Stribling, and Commodore S. P. Lee, appointed by the then Secretary of the Navy to investigate the condition of navy yards and make recommendations concerning them, reported with regard to the Norfolk Navy Yard as follows:

This is considered the best site on the Atlantic seaboard for a large navy yard. It is situated near the capes of the Chesapeake Bay on the Elizabeth River. Its natural features—proximity to the sea, central position on the coast, mild climate, secure defense by land and sea, a large accessible harbor, safe from wind, sea, and ice, grand extent of fit and inexpensive land, supplying the most abundant and convenient water front, and almost natural basins, like Paradise Creek—are extremely favorable for the construction of a great and national navy yard for all purposes which modern naval warfare requires.

As late as 1912, Secretary of the Navy Meyer testified before the Committee on Naval Affairs as follows:

I studied the conditions on the Atlantic coast from Charleston to Portsmouth and put the matter up to the General Board of the Navy, and after they had given their opinion I further assigned it to the Joint Army and Navy Board for consideration, and

they reported that the ideal plan for the Navy would be to have two great naval bases on the Atlantic coast in harbors which would receive and could maintain the entire fleet and its auxiliaries. It appeared self-evident that the only two places which could receive the fleet and all its auxiliaries were Hampton Roads, where we have the Norfolk Navy Yard, and Narragansett Bay. If we were freshly confronted with the duty of locating and building the naval stations required on the Atlantic, without regard to existing stations, the interests of the Navy and the Nation would be best served by the establishment of one first-class station on the coast north of the Delaware, equipped for docking, repairing, and provisioning at least half of the entire fleet, and one station of the same capacity at Norfolk.

And Admiral Mahan, generally recognized as one of our greatest naval experts, in *Naval Strategy*, pages 169-170, makes the following statement:

Chesapeake Bay and New York, on our Atlantic coast, are two points clearly indicated by nature as primary bases of supply, and consequently for arsenals of chief importance. For these reasons they are also proper ports of retreat in case of a bad defeat because of the resources that should be accumulated in them.

These statements, if any reliance whatever can be placed in the judgment of Army and Navy experts, furnish the most conclusive evidence that the Norfolk Navy Yard ought to be made one of the great naval bases of the country. Such a naval base should have ample docking and repair facilities and should be so equipped that ships could go there on short notice and be docked, repaired, coaled, supplied, and sent out again with a minimum loss of time. And if the interest of the Navy and of the Nation can be best served by the establishment of such a base, and this is the overwhelming opinion of all Army and Navy experts, then its equipment with proper docking and repair facilities for such a purpose ought not longer to be neglected. It already meets all the other essential requirements for such a naval base.

First. It is located on deep water. The Norfolk-Portsmouth Harbor, on which it is located, is one of the very best on the Atlantic coast, and is accessible at all seasons of the year. It has been so pronounced by ship captains of every nation of the world, by the greatest masters of rail and water transportation in this country, and by every naval board that has been appointed to examine it. It is free from obstruction, free from severe storms, and free from damage by ice. The depth of water from the yard to the sea, only 27 miles distant, is 35 feet, and additional depth, when desired, can be easily obtained and at comparatively small cost. The width of the channel is now 400 feet—will soon be increased to 600 feet—and is sufficiently wide to enable the largest ships of the Navy to reach it without difficulty. There is so little silting in the channel that this width and depth can be easily maintained. And the average range of tide in the river is only about 2½ feet, and never interferes with the safe and easy navigation of the harbor.

Some one, it is true, has suggested that the yard is located "on a little river;" but it is also true that the Norfolk-Portsmouth Harbor, in which it is located, together with Hampton Roads, which is a part of it, is big enough to handle annually more than 23,000,000 tons of water commerce, valued at more than a billion and a half dollars, and is also big enough to float the combined navies of the world.

Some doubt having been expressed as to the depth of the channel, I submit herewith a letter from the Chief of Engineers, United States Army, which reads as follows:

OFFICE OF THE CHIEF OF ENGINEERS,
October 4, 1913.

Hon. E. E. HOLLAND,
House of Representatives.

SIR: Replying to your letter of the 2d instant, I have the honor to inform you that the project for the improvement of Norfolk Harbor provides for a depth of 35 feet at mean low water, and on June 30, 1913, there existed a channel from deep water in Hampton Roads to above the Norfolk Navy Yard of not less than 35 feet at mean low water, but the controlling depth over Thimble Shoal, between Hampton Roads and the ocean, was on June 30 only 34 feet at mean low water. It is expected, however, that the full project depth of 35 feet will soon be available over this shoal.

Very respectfully,

WM. T. ROSSELL,
Chief of Engineers, United States Army.

This project has now been completed and a survey has been asked for with a view to securing a depth of 40 feet. With such a depth any battleship of the Navy can reach the station without difficulty. Two of the Navy's largest dreadnaughts did reach it and were successfully docked at this station only a few months ago.

The modern dreadnaught when leaving a navy yard with all ammunition, coal, and stores aboard, will have a mean draft of 29 feet 9 or 10 inches, and probably an extreme draft of more than 30 feet. I have the following letter as my authority for this statement.

BUREAU OF CONSTRUCTION AND REPAIR,
January 15, 1914.

MY DEAR MR. HOLLAND: Referring to your inquiry of the 12th instant, I have the honor to inform you that the battleships New York, Texas, Nevada, and Oklahoma have a mean draft, under normal displacement—that is, with two-thirds coal, two-thirds ammunition, and two-thirds stores aboard—of 28 feet 6 inches. When leaving a yard, with all coal, ammunition, and stores aboard, they will have a mean draft of 29 feet 9 or 10 inches. Depending upon the distribution of stores, it is probable that each of these vessels will have an extreme draft at one end or other of the ship of more than 30 feet. With the increase in size of ships, it is unquestionable that drafts will be further increased.

Very sincerely,

R. M. WATT,
Chief Constructor, United States Navy.

The Philadelphia yard is located on the Delaware River. The Delaware River has a probable depth of 30 feet 1 inch at mean low water. It will take years of time and millions of money to complete the authorized project of 35 feet for that river. I have the following letter as my authority for this statement:

OFFICE OF CHIEF OF ENGINEERS,
January 15, 1914.

Hon. E. E. HOLLAND,
House of Representatives.

SIR: I acknowledge receipt of your request of the 13th instant. I have the honor to advise you that the maximum draft that can be carried over the shoalest part of the Delaware River from the sea to the navy yard at Philadelphia is 30.1 at mean low water. The mean range of tide varies from 5.3 feet at Philadelphia to 6 feet at the head of the Delaware Bay. The width of this channel is 600 feet in the straight reaches and somewhat wider at the heads.

Second. The annual report of the Chief of Engineers for the year ending June 30, 1913, shows that the 35-foot channel for this section of Delaware River was on that date about 12½ per cent completed. The estimated cost of this channel is \$10,920,000, of which \$4,110,600 has been appropriated to date, leaving \$6,809,200 yet to be appropriated.

Third. During the past fiscal year approximately \$1,000,000 was expended in furthering the work on this project. At this rate 10 years would be required to com-

plete the improvement. The present plans contemplate an expenditure of approximately \$2,000,000 a year, which would thus cut the time for prosecuting the work down to five years. As a matter of fact, however, the length of time which will be required to carry this work to completion will depend upon the rate at which appropriations for the work are made by Congress.

Very respectfully,

EDW. BURR,
Colonel, Corps of Engineers,
Acting Chief of Engineers.

This letter shows that, so far as the War Department is concerned, the channel of the Delaware River is "legislatively completed at 30 feet for mean water," but the actual channel conditions are probably more accurately described by Representative Moore, of Philadelphia, one of the best-informed men in the House on questions of this kind, in the argument he made before the House Committee on Naval Affairs last year. At that time he made the following statement:

They have reported that we have 30 feet of water, so far as all legislation and engineering is concerned, for a length of 60 miles. There are creeks and rivers running into the main channel which add to the silt formation. It is a slushy, soft sort of material, and men who navigate the river differ as to the actual bottom depth; but it is a fact that we have more than 28 feet at mean low water, and we have what the Army engineers and shipping men consider an actual 30 foot mean low water depth, including this silt. At this time we are working under the new appropriation on a 35-foot channel, and that work demonstrates that here and there may be a formation of silt which raises the bottom at certain points in this 60-mile length. Vessels drawing more than 28 feet can and do push their way through it, but they take advantage of the tides. The problem is one of dredging and maintenance, and we are now trying to meet it. (See Congressional Record, 62d Cong., p. 2139.)

The maintenance of the present depth, according to the report of Lieut. Col. Kuhn, "has at all times necessitated careful observation of the channel at all points by survey parties, and the prompt removal of any shoaling on the first indications" (see Rept. U. S. A. Engineers, 1913, p. 1747), and at a total cost of more than \$300,000 for the past year, or nearly one-eighth of the total amount expended by the Government on the maintenance and improvement of the Norfolk-Portsmouth Harbor since 1876.

But the depth of the Delaware River, if 30 feet 1 inch at mean low water, is not sufficient for its safe navigation by the present large dreadnaughts, and certainly will not be safe for vessels of larger size and of increased draft. The battleships *New York*, *Texas*, *Nevada*, and *Oklahoma* "have a mean draft, under normal displacement, of 28 feet 6 inches," and according to the best "expert naval opinion a safe channel should be swept to at least 3 feet below the maximum battleship draft." I have the following letter as my authority for this statement:

NAVY DEPARTMENT, January 27, 1914.

MY DEAR MR. HOLLAND: Your letter to Rear Admiral Blue, respecting the depth of water that should be under a battleship's keel for safe investigation has been brought to my attention, and I beg to reply as follows:

Expert naval opinion considers that a safe channel should be swept to at least 3 feet below the maximum battleship draft. Thus a battleship drawing 32 feet could safely use a channel with 35 feet of water at mean low water. The extra 3 feet is necessary because every ship "squats" when proceeding in shallow water, the amount of "squats" or increase in draft depending upon the speed. The general board of the Navy has recommended a practicable depth of 40 feet in all approaches to navy yards, because a ship drawing 32 feet—the maximum draft of new construction—with her compartments forward flooded, is estimated to increase her draft to 39 feet. By proceeding dead slow, she could use a channel with a known depth of 40 feet. The above figures apply to smooth water. If there is an ocean swell at the entrance to

a channel an additional allowance must be made, and this allowance depends upon local conditions. When strong local offshore winds blow for a considerable time, the depth of water in channels leading to large estuaries, such as Chesapeake Bay, and certain harbors, as New York, is very appreciably decreased.

Sincerely yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

HON. E. E. HOLLAND,
House of Representatives.

Would a practical business man, with full knowledge of the condition of the channel approaches to the two stations, build at this time a dry dock capable of accommodating the biggest ships of the Navy, at Philadelphia or at Norfolk?

Second. It is located sufficiently far from the sea to prevent its bombardment by an enemy's fleet, behind ample defenses, independent of the fleet, and with an approach channel that can not be easily obstructed.

The Naval Board appointed in 1869 to make a report on the conditions of the Norfolk yard, said:

- It is, though near the sea, as inaccessible to attack as if it were far inland; possessing every advantage required for defense by land and by sea, and by its exterior and exterior lines of defense. Its situation is healthy, in a temperate climate, in the sea air, and on a firm, sandy soil.

- It has ample defenses independent of the fleet. Large fortifications have been erected by the Government at Fortress Monroe, and these are ample to protect the yard and also to prevent any obstruction of the approach channel. When Cape Henry is fortified, as is now contemplated, it will be the best protected yard on the coast, and can, in the opinion of Army and Navy experts, be easily maintained, even in time of war, as the greatest distributing, equipping, and refitting station of the Navy.

Third. It has good communication, both by rail and water, with manufacturing and supply centers, and is capable of furnishing quickly sufficient coal, fuel, oil, provisions, and other supplies for naval vessels.

Eight great trunk lines, having a trackage of nearly 50,000 miles, and 32 foreign, coastwise, and river lines, operating and reaching out in every direction, connect the Norfolk yard with all the principal material-supply depots in the country. Materials of all kinds and of the very best quality used in the construction or repair of ships can be assembled here with great dispatch and at the lowest cost. Such materials, and in such quantities as may be desired, are now assembled at Newport News, located in almost the same harbor, at prices which enables the great shipbuilding plant at that point to successfully compete with all other shipbuilding plants in the country for Government work.

It is now recognized as the great clearing house of the fleet for coal, oil, ammunition, and stores. More than 45 per cent of the coal consumed for naval purposes on the Atlantic coast is delivered to ships and vessels of the fleet from the great terminal coaling points on Hampton Roads. Naval colliers also carry large quantities of this same coal from these same points to the Pacific coast. The kind of coal delivered from these piers is the celebrated Pocohontas coal, long since recognized as the very best steam coal on the market for naval purposes.

Great quantities of ammunition are prepared, assembled, and stored at the naval magazine at St. Juliens, only a few miles from the station. More than 3,000,000 separate pieces of ammunition, including shells, cartridges, and explosives, were delivered from this station to such vessels during the six months ending December 31, 1912.

On the opposite side of the river from the yard are great oil tanks from which vessels can be promptly supplied, and also the St. Helena Training Station, one of the very best, and certainly the least expensive, stations owned by the Government. During the fiscal year July 1, 1912, 4,932 men were transferred from this station to seagoing vessels.

I have mentioned these facts to show that this yard, already the Navy's greatest coal, ammunition, and stores supply station, can, by reason of its location and its splendid rail and water transportation facilities, be as easily made one of its greatest material supply depots. I have also mentioned them to show that naval vessels, after they have been docked, repaired, or constructed at this yard, can then be quickly supplied with coal and ammunition, provisioned, and prepared for any cruise or for any service.

Fourth. It is located at a point where climatic conditions are unsurpassed, and where an efficient force of skilled workmen can be secured and maintained at all times.

The climatic conditions of the yard are almost ideal. Its mean temperature is as follows: Spring, 57°; summer, 78°; autumn, 62°; winter, 42°. Severe weather never interferes with its work. Workmen can be comfortable while at work, and are thereby enabled to do better work and in much better time than if compelled to work under different climatic conditions. With a certainty of steady employment, and with a certainty of cheap and comfortable homes, which can easily be had either in Norfolk or Portsmouth, mechanics will be attracted to this yard and an efficient force of workmen can be maintained at all times.

This is best evidenced by the fact that at Newport News, practically within the same harbor, and where climatic conditions are similar, no difficulty has been experienced by the private shipbuilders there in maintaining a sufficient force of skilled mechanics, and at such fair and reasonable wages as to enable them to secure contracts for building great battleships for the Government in competition with all the other great shipbuilders of the country. If such a force of skilled workmen can be secured and maintained at Newport News by private parties, it can hardly be doubted that equally as large a number can be secured and maintained at Norfolk by the Government.

This station, therefore, meets all the requisites for a great naval base, with the single exception that it has not sufficient means for the upkeep and repair of the fleet. Its docking and repair facilities are inadequate. There is an especially urgent demand for additional docking facilities, and for the reasons, briefly stated, as follows:

First. By reason of its geographical location it is visited by a larger number of naval ships and vessels than any other station on the coast.

Naval ships and vessels pass and repass it in going to and returning from all points south of Cape Hatteras. They call at this station for coal, ammunition, stores, and necessary dockings and repairs.

When we examine the sheets issued by the War Department showing the daily movements of vessels for the year 1912, we find, according to a report made by Capt. J. B. Patton, of the Navy, the following:

Arrivals and departures of vessels.

Norfolk Navy Yard.....	642
Norfolk Harbor, including Hampton Roads.....	662
Total.....	1,304
New York Navy Yard.....	375
New York Harbor, including North River, East River, and Tompkinsville, and including 246 arrivals and departures during naval review, Oct. 12, 1912.	437
Total.....	812
Boston Navy Yard.....	202
Boston Harbor.....	1
Total.....	203
Philadelphia Navy Yard.....	123
Philadelphia Harbor.....	0
Total.....	123

Arrivals and departures, as shown by Movements of Vessels, issued daily by the Navy Department, for the calendar year 1913, are as follows:

Norfolk Navy Yard.....	564
Norfolk Harbor, including Hampton Roads.....	828
	1,392
New York Navy Yard.....	455
New York Harbor, including Tompkinsville, North and East Rivers.....	142
	597
Boston Navy Yard.....	179
Philadelphia Navy Yard.....	138

These figures show that during the years 1912 and 1913 the number of naval ships and vessels at the Norfolk yard for docking, repairs, and other purposes, and in Hampton Roads for coal, ammunition, and stores, was larger than at all the other yards on the Atlantic coast. I have made no examination for the purpose of comparing these figures with the figures for other years, but I am satisfied a close examination will disclose that they are not unusual.

Mr. LEA. I would like to make just a brief statement there. It is pretty hard to answer a statement sometime after it has been made, and I would like to answer that statement at this point. I simply want to suggest that two-thirds of the tonnage of the naval rendezvous at New York in October a year ago came from the Philadelphia Navy Yard.

Second. In consequence of the large number of ships that go to this yard the number of necessary dockings is larger than at any other station on the coast.

Hampton Roads is the fleet's rendezvous. Its drill and practice grounds are near the Capes. Its peace cruising is largely done in

the West Indies. Ships pass and repass this point in going to and returning from the Panama Canal. It is quite certain, therefore, that the number of ships which will go to this station for docking, repairing, and other purposes, and to Hampton Roads for coal, ammunition, and supplies, will largely increase each year.

For the calendar year 1912, according to a report made by Capt. J. B. Patton to the department, the number of vessels docked at the several yards on the Atlantic coast was as follows:

Norfolk	103
New York	27
Boston	23
Philadelphia	15

If we credit—

Says Capt. Patton—

New York with only 3½ docks, because No. 4 Dock was only in use half the year, and Norfolk with 2½ docks, because No. 1 was used exclusively for six months in rebuilding the *Warrington*, then the activity of the docks at the several yards is indicated by the following figures:

	Vessels
Norfolk docked per dock per annum	41
Boston docked per dock per annum	23
New York docked per dock per annum	23
Philadelphia docked per dock per annum	15

And this is not an exceptional showing for this yard.

In a letter from the Chief of the Bureau of Construction and Repair, dated August 22, 1913, I find the following statement:

Data regarding vessels docked during the past year.

	Number of vessels docked.	Days dock in use.
Navy yard, Boston:		
Dock 1	32	121
Dock 2	23	173
Total	55	
Navy yard, New York:		
Dock 1	29	27
Dock 2	18	22
Dock 3	26	25
Dock 4	16	16
Total	89	
Navy yard, Philadelphia:		
Dock 1	15	21
Dock 2	28	22
Total	43	
Navy yard, Norfolk:		
Dock 1	28	24
Dock 2	53	26
Dock 3	63	23
Total	144	

This is an exceedingly interesting statement. It shows that we docked at Norfolk last year more than 40 per cent of all the ships docked at all the stations on the Atlantic seaboard. It shows that during the past year as many ships were docked at the Norfolk station as at any two other stations on the coast, considerably more

than twice as many as at Boston and considerably more than three times as many as at Philadelphia. It also shows a greater activity of the docks at the Norfolk station than at any other station, each dock at this yard having been in use a greater number of days during the year than any dock at any other yard, with the single exception of Dock No. 2 at the New York yard.

I also submit herewith a statement showing the number of vessels docked at the several yards for the years 1909, 1910, and 1911. This is also an interesting statement. It shows the increasing activity of the docks at the Norfolk yard. Sixty-six vessels were docked here in 1909 and 144 in 1913. At Philadelphia 25 vessels were docked in 1909 and 43 in 1913.

Navy yard.	Dock No.	Number of vessels.			Days dock was in use.		
		1909	1910	1911	1909	1910	1911
Boston.....	1	14	29	15	89	176	72
	2	12	28	19	93	117	126
Total.....		26	57	34	182	292	204
New York ¹	1	27	34	32	213	222	199
	2	8	16	2	51	151	261
	3	13	15	26	157	180	199
Total.....		48	65	60	421	554	619
Philadelphia.....	1	13	16	6	180	101	269
	2	12	17	20	186	206	136
Total.....		25	33	26	366	307	399
Norfolk.....	1	26	20	43	321	277	226
	2	30	24	36	275	233	226
	3	8	16	23	102	132	124
Total.....		66	60	102	698	642	594

¹ Dry Dock No. 4 was not commissioned until May 9, 1912.

First vessel docked Dec. 8, 1906.

If a larger number of vessels are docked per dock per annum at this yard than at any other yard, and if the docks at this yard are used a greater number of days during the year than the docks at the other yards, it would seem to follow that there is a more urgent demand for additional docking facilities at this yard than at any other on the Atlantic coast.

Third. The present docking facilities at the yard are insufficient to meet the needs of the fleet.

This can be established, first, by the testimony of Army and Navy experts, and, second, by the actual physical condition of the docks at the yard.

On page 181 of the hearing before the committee Admiral Stanford, Chief of the Bureau of Yards and Docks, made the following statement:

The present docking facilities are overtaxed. The present docks are insufficient for the docking of vessels that are now assigned to the yard.

The Board of Inspection for Shore Stations, in its recent report, said:

While an additional dry dock would increase the docking facilities at this yard, it would not constitute a reserve, since the present docking facilities are inadequate.

We now have three docks at this station. Dock No. 1 is a small dock and has been in use since 1832. At that time only wooden ships were constructed. Dock No. 2 is a timber dock and was completed in 1889, or 25 years ago. It is already beginning to show signs of weakness and decay. It is necessary to make large annual repairs on it in order to keep it in condition to be used. The life of a timber dock is only 30 years. Referring to this dock, the Chief of the Bureau of Yards and Docks, in a letter dated September 16, 1913, says:

MY DEAR CONGRESSMAN: Replying to your letter of yesterday (the 13th), inquiring as to the present condition of the timber dry dock at Norfolk—Dry Dock No. 2—and how many years it can probably be safely used, the bureau begs to state that this dock was completed in 1889 and has never received any extensive repairs. The average life of a timber dock, without extensive repairs, is generally assumed to be about 30 years, depending largely on local conditions, but this dock has withstood deterioration unusually well and is now in fairly good condition. It is estimated that it is good for 10 years' useful life, with an annual expenditure of about \$3,000. This estimate, however, is based upon a superficial examination which, of course, does not disclose the condition of the foundation, piling, and framework, but is thought to be conservative.

Very respectfully,

H. R. STANFORD, *Chief of Bureau.*

The life of this timber dock is therefore very uncertain. It certainly can not be many years until it becomes unfit for use. It would most probably be condemned before a new dry dock could be completed, even if one should be authorized at this session. Fifty-three vessels were docked in it during the past year. Without this dock many of these dockings, although necessary to maintain the efficiency of the fleet, could not have been had at this station.

Dock No. 3 is the only dock at the yard capable of accommodating the largest ships, and is in almost continuous use. If this dock should be damaged, or should have to be repaired or should have to be used for many months by one ship undergoing extensive repairs, then the yard could not furnish the docking facilities necessary for the actual needs of the fleet. It is always wise to provide for such contingencies as may reasonably be expected. It is not unreasonable to expect that this dock may have to be repaired or may have to be occupied for a considerable time by a vessel undergoing repairs.

The number of large battleships is increasing. Injuries to ships, necessitating prompt dockings, are liable to occur at any time, and vessels in distress invariably seek this yard. With Hampton Roads used by the fleet as its most frequent base of operations, there is a greater probability of unforeseen dockings at the Norfolk yard than at any other station on the coast. Would it not be the part of prudence to provide ample docking facilities at this section for such contingencies?

There is only one other dock on the Atlantic coast capable of accommodating the biggest ships of the Navy. Would you send these ships there to be docked? Could this station, in addition to the ships assigned to it, take care of the additional dockings required? And if it could, would not the delay and expense of sending ships to that station be considerable, and sometimes dangerous?

The fact that docking facilities at this yard are inadequate and that additional facilities are needed, is convincingly shown by the circumstances attending the recent arrival there of the disabled

battleship *Vermont*. The battleship *Vermont* was docked immediately upon its arrival, in order that the extent of its damage might be determined. The battleship *Delaware*, which convoyed the *Vermont* to Norfolk, was found to need examination. There being only one dock there in which the *Delaware* could be examined, it was necessary to undock the disabled warship *Vermont* before any repairs on it had been undertaken and dock the *Delaware* in order that its condition could be ascertained. In the meantime the *New Hampshire* and the *Louisiana* had reached the station, and it was necessary to delay the docking of these warships until the repairs on the *Delaware* could be completed. Such a condition, liable to occur at any time, not only makes it imperative to provide additional docking facilities at this station, but proves conclusively that the present facilities are inadequate.

With such evidence and such conditions before them, the Army and Navy experts have recommended additional docks for this station, and these recommendations have been approved by the department.

The basic value of any yard is usually measured by its dry dock possibilities and its dry dock facilities. Its strategical, commercial, and manufacturing advantages, "as well as its adaptability and capacity for contributing to the endurance and efficiency of the fleet," largely determine its military usefulness. The Joint Army and Navy Board must have been satisfied that its dry dock possibilities were apparent and could easily be enlarged, and that its advantages made it a station of the greatest military usefulness, or else this board would not have advised Secretary Myer—

that the interest of the Nation and of the Navy could be best served by the establishment at Norfolk of a first-class station, fully equipped for docking half the fleet.

The Board of Inspection for Shore Stations, in its recent report, declared—

that the most important improvement needed at the Norfolk yard, and the one which should be provided at the earliest possible time, is an additional dry dock of the largest dimensions.

And gave as one of the reasons for its conclusion—

that this yard is centrally located and more liable to be called upon for unforeseen repairs and unforeseen dockings than any other station on the coast.

Admiral Stanford, Chief of the Bureau of Yards and Docks, in the hearing before the committee, p. 173, quotes this recommendation of the board in full, and gives it his indorsement.

Admiral Watt, Chief of the Bureau of Construction and Repair, on page 260 of the hearings before the committee, stated that—

the lower Chesapeake is a natural base, and that a permanent naval base should have ample docking and repair facilities.

Capt. Winterhalter, speaking for the General Board, recently said, in part, as follows:

Sectionalism does not enter into the consideration for the good of the Navy. The General Board expresses the best thought of the Navy, embodying research and investigation, together with calm deliberation upon the needs of the right arm of the national defense. Its conclusions may be accepted as those of minds ripened by long experience in the service.

A dry dock of 1,700 feet is necessarily long and unnecessarily expensive. But in order to place Philadelphia in its proper strategical

position with regard to the dry-dock question, I requested the General Board, on last Tuesday, for its opinion as to the relative order of importance of location of the next needed large docks. This is it:

The provision of a new dry dock at Philadelphia should wait upon the provision of the new dry docks at Guantanamo, Norfolk, and New York, in that order of importance, unless the appropriations can be obtained for simultaneous building. That is the Atlantic dry-dock solution—the Navy needs—brought up to date. (See Philadelphia Inquirer, Dec. 20, 1913.)

Admiral Stanford, Chief of the Bureau of Yards and Docks, on page 184 of the hearings, after quoting the recommendation of the general board as to dry docks, said:

The recommendation for the Norfolk dock has been repeatedly urged for the past four years.

Could expert evidence in favor of the location of the new dry dock at Norfolk be stronger? It is not the opinion of a single board but the general consensus of opinion of all the Army and Navy experts who have for years calmly deliberated upon the needs of the Navy, the unbiased conclusion of men whose minds have been ripened by years of experience in the service. Such recommendations had, and ought to have had, strong weight with the Secretary of the Navy. Convinced that he ought to approve them, he did not hesitate to do his duty and to recommend that an immediate appropriation be made with which to begin the construction of the proposed dock. Supported by the best judgment of the Army and Navy experts from every section of the country, he need not be disturbed because of some unjust criticism of his course. I sincerely hope that this committee will adopt his recommendation and will make the appropriation asked for.

I have heard only three objections to the location of the proposed dock at Norfolk.

The first objection is that the channel conditions of the river in front of the yard at Norfolk are not satisfactory.

It is true that these conditions are not entirely satisfactory, and ought to have been improved years ago. Under a project adopted March 2, 1907, a dredged channel 30 feet deep 600 feet wide from Hampton Roads to Lamberts Point, 800 feet from Lamberts Point to the navy yard, and from 470 to 700 feet in the Southern Branch of the Elizabeth River, was provided for.

By the act of June 25, 1910, the dredging of the channel 35 feet deep and 400 feet wide at mean low water from deep water in Hampton Roads to the Belt Line Bridge above the navy yard, a distance of 11 miles, was authorized. Both of these projects have since been completed and, in addition, the channel conditions have been improved by dredging authorized from time to time by the Navy Department.

The depth of the dredged channel in front of the navy yard is now 35 feet and from 470 to 700 feet wide, varying according to the pier-head lines on the opposite side of the river. In front of Dry Dock No. 3 this channel is now about 600 feet wide.

Mr. KELLY. How long are the longest battleships?

The CHAIRMAN. I think the longest is five hundred and some odd feet.

Mr. KELLY. How wide is the river in front of the yard?

Mr. HOLLAND. In front of Dry Dock No. 3 this channel is now about 600 feet wide.

This is best evidenced by the fact that two of the Navy's largest battleships, the *Texas*, 565 feet long, and the *Wyoming*, 568 feet long, were recently successfully docked at this station. Steps are now being taken, however, to improve these channel conditions. An appropriation has already been made for the purpose of acquiring, by purchase or condemnation, land on the opposite side of the river at the narrowest point. No agreement could be reached between the Government and the owners on the price to be paid therefor, and, in consequence, proceedings have been instituted for the purpose of acquiring this land by condemnation. These proceedings will shortly be terminated, and, before the completion of the proposed dock, if authorized at this session, the maximum width of channel required for all naval needs can and will be secured, and at a cost not exceeding the appropriation already made therefor. In addition to the improvements already authorized, it is confidently expected that a project providing for a channel 35 feet deep and 600 feet wide, recommended in a recent report and approved by the Board of Engineers for Rivers and Harbors, will be adopted at this session of Congress. When all these improvements are completed, there will be a dredged channel 750 feet wide and 35 feet deep and an available width fronting Dry Dock No. 3 of at least 850 feet. And my information is that if the proposed new dry dock is located, as suggested by Admiral Stanford, Chief of the Bureau of Yards and Docks, there will be in front of this dock an available channel width of at least 1,500 feet. These channel conditions are not, therefore, as grave as some people would have you believe. They can be easily improved, within a reasonably short time, and at a price less than the cost of maintaining the channel in the Delaware River for one year. The fact is, that the channel, without any improvements, is now deep enough to permit the biggest battleships to reach the yard, and, when the authorized improvements are completed, will be wide enough to permit the largest ships now contemplated to be docked there without the slightest difficulty or danger. This objection, therefore, is a mere pretext for opposing, and not a real objection to, the proposed improvement.

The second objection is, that the location of the proposed dock is a short distance from the present yard shops.

This is true, but a casual inspection of the yard and a careful study of the location, character, and condition of the buildings will convince any impartial person that this objection is not entitled to serious weight. The present facilities at the yard for economical work, as well as the necessary conveniences for such work, are not such as will be found at any modern shipbuilding plant. Admiral Stanford, in the hearing before the committee, page 173, made the following statement:

The present yard structures are poorly arranged and poorly designed for the demands which are being made upon them. When this yard was first built they were building wooden ships, and the shops were designed for the building of light-draft wooden vessels.

In the recent report of the Edwards Board I find the following:

The Norfolk yard, being one of the oldest in the country, contains many old buildings, of a design and construction which, judged from modern industrial needs, are

neither adaptable for store houses nor for manufacturing purposes. While they were undoubtedly of excellent construction for the period in which designed, and have served the purpose for which built, some are now showing signs of weakness and the lives of all can not probably be greatly prolonged. It would undoubtedly promote both economy and efficiency to give consideration to the question of erecting new buildings in preference to attempting any important improvement or extension of buildings which were designed for conditions that no longer exist, and which can not possibly again prevail.

These statements are convincing that new buildings and new machinery must be provided, if the yard is to be successfully operated, even as a repair station.

A practical business man always strives to secure for his plant every convenience that will enable him to perform his work in the most economical manner. If he finds some of his buildings are inconveniently located he immediately takes steps to rebuild them on more convenient locations, and if his machinery, by reason of age or otherwise, will not render efficient service, he immediately replaces it with more modern machinery. If the Government wishes to secure satisfactory and economical work it must pursue the same course that an ordinarily prudent business man would follow. This course may necessitate the abandonment of some old buildings and the purchase of some new machinery, but it will be real economy to take this step rather than to continue to use buildings designed for the handling of "light-draft wooden vessels," and machinery, some of which was purchased before the Civil War, and ought to have been condemned years ago. If these new improvements are placed upon the undeveloped tract of land now owned by the Government, and the only logical development of the yard is in that direction, then by the time the new dock is completed this apparent objection will have been entirely removed.

But Philadelphia ought not to raise this objection to the location of the proposed dock at Norfolk.

The appropriations for the Philadelphia yard from 1883, when a naval board recommended that it should be closed unless it could be improved for the purposes for which originally purchased, to 1914, inclusive, have amounted to \$9,616,319.21. During the same period the appropriation for the Norfolk yard have amounted to \$8,286,958.23, or \$1,329,361 less than the appropriations for the Philadelphia yard. My authority for this statement is a letter from the Paymaster General of the Navy, which is submitted herewith:

NAVY DEPARTMENT, *January 17, 1914.*

HON. E. E. HOLLAND, M. C.,
House of Representatives.

DEAR SIR: Complying with your request on the 13th instant, I take pleasure in inclosing herewith a statement showing the aggregate amount of the appropriations for the Boston, New York, Philadelphia, and Norfolk Navy Yards for the years 1883 to 1914, inclusive.

Very respectfully,

T. J. COWIE,
Paymaster General United States Navy.

Boston.....	\$7, 218, 360. 00
New York.....	12, 533, 561. 47
Philadelphia.....	9, 616, 319. 21
Norfolk.....	8, 286, 958. 23

The two docks built at Norfolk within that period have cost \$2,233,945, and the two docks built at Philadelphia have cost \$2,020,250, or a difference of \$213,695. (See Navy Yearbook, 1913, p. 854.)

Mr. LEE. I wish to state at this point that I showed to the naval expert, Capt. Winterhalter, that instead of a dry dock at Norfolk costing less than a dry dock at Philadelphia, that the dry dock at Philadelphia cost \$557,000 less than the dry dock at Norfolk, and I hope the gentleman will correct his figures in that regard.

The CHAIRMAN. He makes his own statement, and your brief is in the record. The two statements will be there for the committee to consider.

Mr. LEE. Capt. Winterhalter showed that he did not know that the power plant at Philadelphia was included in the dry dock.

The CHAIRMAN. Those are questions of fact for the committee to consider.

Mr. WITHERSPOON. That does not render the other statement incompetent at all.

The CHAIRMAN. No. According to these figures, Philadelphia has expended on its buildings and improvements, exclusive of its dry docks, \$1,543,056 more than Norfolk has expended during the same period, leaving out of consideration the facts that out of Norfolk's appropriations the St. Helena Training Station has been largely built and 272 acres of additional land purchased, at a cost of \$400,000, and added to the original yard. But after all, the location of this dock has not yet been selected, and when selected it may be found that it will be so close to the present yard shops that it will not be necessary to erect many new buildings.

But why should Philadelphia urge this objection? Any experienced employee at any navy yard will tell you that the one shop that ought to be near a dry dock is the machine shop. If the dock should be located at Philadelphia so as to connect the river and the basin—and this is urged as the main argument for its location there—it will be 1,400 feet, or more than a quarter of a mile from the machine shop. The relation, therefore, between shops and dry dock would not be ideal even at Philadelphia. (See Stanford hearing, p. 186.)

The third objection is that the dry dock can not be as economically constructed at Norfolk as it can be at Philadelphia.

It seems to me that the question of cost is one of secondary importance. A new dry dock ought to be constructed at the place where it is actually needed, and not where it can be most cheaply constructed. It ought to be placed at a station where it can be reached by the biggest battleships, so that the present efficiency of the Navy may be promoted. But would it cost more to build this dock at Norfolk? There is no reason why the work can not be done there just as cheaply as elsewhere, and in this opinion Admiral Watt, Chief of the Bureau of Construction and Repair, concurs. On page 261 of the hearings he makes the following statement:

There are no reasons known why a dry dock can not be constructed there as cheaply as at other stations.

It is not necessary, however, to rely upon more estimates of cost. Dry docks have been built at the two stations within recent years,

and the figures showing the actual cost of these docks have been easily secured. Dry dock No. 2 at Philadelphia cost \$1,471,550. Dry dock No. 3 at Norfolk originally cost \$1,200,000. It was subsequently extended, and, with the extension, it cost, fully completed, \$1,728,965, or \$257,415 more than the Philadelphia dock. (See Navy Year Book, 1913, p. 845.)

A letter submitted herewith gives the cost and size of each dock:

NAVY DEPARTMENT, January 17, 1914.

Hon. E. E. HOLLAND, M. C.,
House of Representatives.

Subject: Information regarding dry docks at Philadelphia and Norfolk Navy Yards.
Reference: Your letter of January 13, 1914, to the Bureau of Yards and Docks.

MY DEAR MR. HOLLAND: Referring to your letter above mentioned, the following information is furnished in regard to the dry docks at Philadelphia and Norfolk:

	Philadelphia, No. 2.	Norfolk, No. 3, including extension.
Length.....	744 feet 6½ inches.....	722 feet 11 inches.
Depth, mean high water, to top of keel blocks.....	29 feet 10½ inches.....	31 feet 1 inch.
Width, 6 feet above sill.....	91 feet 10 inches.....	101 feet.
Cost.....	\$1,471,550.57.....	\$1,728,965.93.

The Norfolk dock was extended in 1910 by the addition of 182 feet at a cost of \$528,965.93, which is included in the total cost given above.

The depth and width of the entrance of the Philadelphia dock are less than the Norfolk dock.

Sincerely, yours,

JOSEPHUS DANIELS,
Secretary of the Navy.

You will note that the dock at Philadelphia is a little longer than the dock at Norfolk, but the Norfolk Dock is deeper, has a wider entrance and, according to the testimony of the experts, can now accommodate the biggest ships of the Navy, while the Philadelphia Dock, according to the same experts, is not big enough to do so. It must also be remembered in this connection that the removal of the end of the original dock, in order to extend it, added materially to its final cost and may entirely account for the difference in the cost of the two docks. Conditions at the two yards are the same now as then, and the only sensible conclusion is that the relative cost of dock construction at the two yards can not be materially different. And this statement is sustained by the following letter from Admiral Stanford, Chief of the Bureau of Yards and Docks:

BUREAU OF YARDS AND DOCKS,
September 13, 1913.

Hon. E. E. HOLLAND, M. C.,
House of Representatives.

MY DEAR MR. HOLLAND: The following information regarding certain conditions at the Norfolk Navy Yard is submitted in compliance with your request of December 11:

The present width of channel in front of the navy yard is now about 500 feet. An appropriation has been made for acquiring property on the other side of the river opposite the entrance to the largest dry dock, No. 3, and widening the river by dredging to give a channel 700 feet wide in this vicinity.

In the construction and extension of Dry Dock No. 3, the latest and largest one at Norfolk, no special difficulties were encountered in the foundation. So far as can be determined in advance of complete borings or test pits, similar conditions are anticipated on the site of the proposed Dry Dock No. 4.

As regards the relative cost of dry-dock construction at Norfolk and Philadelphia, the principal features of the work affected would be the cofferdam, work of excavation, cost of common labor, and cost of materials required in concrete. It is not probable that the cost of the cofferdam work would be radically different at the two stations. The cost of excavation would probably be slightly less at Norfolk than at Philadelphia, because of the softer character of material to be handled. It is not practicable to make a reliable estimate of the amount of this difference without first making numerous borings, which would not be warranted until after the work of construction had been authorized. The cost of labor would probably be less at Norfolk than at Philadelphia, and this advantage would probably be somewhat increased due to the less rigorous climate at Norfolk.

It is not improbable that the cost of concrete at Philadelphia would be from \$150,000 to \$200,000 less than at Norfolk, as result of the favorable deposits of sand and gravel which are found at Philadelphia, and which would have to be removed incident to the excavation of the dock.

Very respectfully,

H. R. STANFORD, *Chief of Bureau.*

Now, if the principal items of dock construction will be, as stated in this letter, the cofferdam work, work of excavation, common labor, and the materials required in concrete, and of the cost of cofferdam work will not be different at the two stations, the cost of excavation and of common labor less at Norfolk, and the cost of materials required in concrete only from \$150,000 to \$200,000 less at Philadelphia, how is it possible to figure that a 1,700-foot dry dock can be built at Philadelphia at the same price at which our 1,000-foot dock can be built at Norfolk? The fact is, the dry dock at Norfolk, if located as suggested by Admiral Stanford, Chief of the Bureau of Yards and Docks, will cost, according to his estimate, only \$2,350,000, while the 1,700-foot dry dock at Philadelphia, as stated by Representative Moore in his argument before the Committee on Naval Affairs last year, would, in the opinion of Admiral Hollyday, cost in excess of \$4,000,000. (See Congressional Record, p. 2138.)

But some one has suggested that the relative cost of construction at the two yards might be materially different on account of greater difficulty in securing a solid foundation for the dock at Norfolk. Absolutely no difficulty has been encountered in the past with foundations of dry docks and other structures at this station, and there is not the slightest apprehension of any such difficulty in the future. Marl exists at depths varying from 50 to 150 feet below the surface throughout the area of this yard, and in the case of Dock No. 3 at this station this foundation of marl was of such excellent character as to eliminate entirely all need for foundation piles. The following letter from Admiral N. R. Usher, commandant, explains the subsoil conditions at this yard:

Results of exploratory borings, and experience with foundations of dry docks and other structures in the yard proper and at the Marine Barracks, together with knowledge of the experience of others with foundations in this immediate vicinity, all lead to the conviction that subsoil conditions greatly favor the economical construction of a dry dock on the Schmoele Tract. As a matter of fact, it is well known that marl exists at depths varying from 50 to 150 feet below the surface throughout the area of this tract. There is nothing whatever indicating the possibility of encountering variations in the subsoil conditions which would warrant the selection of one site over another within the limits of the Government property at this station.

And the statements made in this letter are sustained by the testimony of Admiral Stanford and of Admiral Watt in the hearings before the committee (p. 1783).

But there is one objection that has not been urged against the location of the dock at Norfolk, and that is the cost of widening and

deepening the channel to the navy yard. The appropriations for the improvement of harbor conditions at Philadelphia, and in order to secure a depth of 30 feet in the Delaware River, have amounted to \$19,217,864.51. (See Report of Chief of Engineers, U. S. Army, 1913, p. 1749.) The estimated cost of the present 35-foot project for that river is \$10,920,000. The appropriations for improving the harbor at Norfolk-Portsmouth, and in order to secure a channel 600 feet wide and 30 feet deep and a channel 400 feet wide and 35 feet deep, have amounted to \$2,625,458.84. The estimated cost of the present project for a channel 600 feet wide and 35 feet deep is \$840,000. The estimated cost of maintenance of the Delaware River channel is \$300,000 per year, and of the Elizabeth River channel, \$15,000. It will cost less than \$1,840,000 to give us a channel 600 feet wide and 35 feet deep from deep water in Hampton Roads to above the navy yard. Substantially the same channel in the Delaware River will cost \$10,920,000.

I have mentioned these facts, not because I object to the improvement of the Delaware River, but in order to show you that a channel of greater depth than 35 feet, if desired by the Navy Department, can be secured for the Norfolk yard at very much less cost than for the Philadelphia yard. And when such depth is secured, it can be more cheaply maintained in the Elizabeth River than in the Delaware River.

There is—

Says the Edwards Board—

a tendency on the Schuylkill and Delaware River sides of the yard to deposit ~~all~~ about the piers and in slack water, which gradually reduces the depths in some places at the rate of about 2 feet per year. (See Edwards Board Reports, p. 16.)

No such conditions prevail at the Norfolk yard.

There is still another objection that can not be made against the location of the dock at Norfolk, and that is, that a dock, if located at Norfolk, would have to be 1,700 feet long. Representative Moore, of Philadelphia, made an argument before your committee last year in favor of the location of such a dock at Philadelphia, but in his argument he was frank enough to say—

that nobody ever heard of a dry dock 1,700 feet long, and that there is certainly nothing of the kind anywhere in the known world. (See Congressional Record, 62d Cong., p. 2137.)

Capt. Winterhalter, speaking for the General Board, on the 20th of December last, made the following statement:

The General Board has never asked for so large a dry dock anywhere. The Panama Canal locks are 1,000 feet long, 110 feet wide, and 40 feet deep, and docks of this size are our present limit. A dock of 1,700 feet is, therefore, unnecessarily long and unnecessarily expensive.

Ex-Secretary of the Navy Meyer, in a letter which I have, and which anyone of you may read, referring to the 1,700 foot dry dock, said:

Personally, I have never recommended it.

Secretary of the Navy Daniels has repeatedly declared:

We have no need for a dock of this size.

Admiral Stanford, in his hearing before the committee, made the following statement:

The reason that a dry dock 1,700 feet long was recommended is not because a dry-dock having a length of 1,700 feet is a military necessity, but because it is 1,700 feet between the basin and the Delaware River, and the dock was to have sufficient length to connect the two bodies of water. (See hearing, p. 160.)

It is very generally assumed that the size of future battleships will be limited to the size of the Panama Canal locks. What, then, is the necessity for a dock 1,700 feet long? Will you authorize a dock of such length when the General Board of the Navy declares that we do not need it now and may never need it?

It is—

Said Admiral Stanford—

the facility that is most necessary to secure the successful use of the reserve basin. (See hearing, p. 157.)

Must we build this dock to secure the successful use of the basin? Can it be true that this basin, urged as one of the arguments in favor of the dock at Philadelphia, is so inaccessible that vessels going into it from the Schuylkill River, "on account of the tides, the narrow and tortuous channel" (see hearing, p. 158), and the "shifting or shoaling of the river bottom" (see hearing, p. 157), require very careful handling? In order to reach it safely are the services of a skillful pilot essential? But do we build docks for the purpose of improving such conditions? The Board for Shore Stations, on page 16 of its report, declares that it "considers that the present access to the reserve basin should be improved by dredging the main channel of the river." This is the usual way of remedying such conditions. Are you going to authorize a departure from the usual custom in this case? Will the danger of some obstruction in the Schuylkill River justify you in doing it? The Edwards Board, on page 16 of its recent report, declares that—

there are also places in the main channel of the Delaware River below Philadelphia where accidental or intentional wrecks would temporarily block access to the sea as effectively as obstructions in the Schuylkill.

How are you going to provide against these obstructions? We need the docks at Norfolk, not for the purpose of improving such conditions as these, but in order that we may have facilities for docking the ships of the Navy.

In conclusion permit me to say that Norfolk's claims to the present dock, whether viewed from the standpoint of strategy, economy, accessibility, or naval necessity, can not be successfully disputed. I have said Norfolk's claims, but if you will permit me to change it I will say the Navy need; for no dock ought to be built at any station unless some naval necessity demands it. Our ablest, our most experienced, our most trusted naval experts, of every rank and from every section of the country, after more than four years' careful study of and calm deliberation upon the needs of the Navy, have declared in the strongest terms that the next large dock ought to be built at Norfolk, and that no dock longer than the Panama Canal locks is necessary or needed. That decision, reached after such careful study and deliberation, by men who are absolutely free from all local influences and all local prejudices and whose only object is to do what may be best for the Navy and for their country, is not only entitled to great weight, but ought to be decisive.

As at present constituted, and not speaking for myself—

Said Admiral Dewey—

the General Board of the Navy is an organization that is made up of men whose training, experience, proven ability, and judgment on naval affairs entitle them to the confidence of the American people. (The Navy, February issue.)

We constantly seek their opinion and absolutely rely on their judgment in other matters. If we refuse to be guided by them now and do what they declare is not necessary or needed, we may subject ourselves to the criticism of having neglected our duty or of having permitted considerations other than the good of the Navy to influence our action.

Now, Mr. Chairman, I regret that I have been forced to make this argument. Philadelphia and Norfolk ought to be fighting together and not against each other. Each city has a great navy yard. The business relations between the people of the two cities have been pleasant and intimate, and nothing ought to be done to disturb them.

I thank you for your indulgence, Mr. Chairman.

Mr. LEE. I would like to ask Mr. Holland a few questions.

Mr. HOLLAND. I will be very glad to answer them.

Mr. LEE. Will Mr. Holland state to the committee who, after the committee had decided last year to recommend the building of a dry dock in Philadelphia, made the point of order against that item?

Mr. HOLLAND. It was made by Mr. Turnbull, and I can explain it.

Mr. LEE. That is all.

Mr. HOLLAND. That is not all, Mr. Chairman.

Mr. LEE. Mr. Turnbull was from Virginia.

Mr. HOLLAND. I would like to explain that.

Mr. LEE. All right.

Mr. HOLLAND. I have here a letter from Mr. Turnbull, and also a letter from Mr. Meyer, the former Secretary of the Navy. This is what Mr. Turnbull said:

FEBRUARY 14, 1913.

HON. GEORGE VON L. MEYER,
Secretary of the Navy, Washington, D. C.

MY DEAR SIR: Sickness prevented my attending the meetings of the Naval Committee while the naval bill was being prepared, but I notice in the first draft of the bill that there was nothing said in reference to the construction of a graving dry dock at Philadelphia, but in the second draft of the bill there are these words inserted:

"Toward the construction of a graving dry dock, one thousand seven hundred feet long and one hundred and ten feet wide, to connect the Delaware River and the Reserve Basin (to cost not exceeding \$3,000,000), \$15,000."

In your annual report you said (I do not remember the page) that it would be necessary in the future to have two dry docks of the length of 1,000 feet constructed, but that the points at which they were to be constructed would be taken up hereafter. On page 709 of the hearings for 1912-13 you say in substance:

That the Joint Army and Navy Board reported that the ideal plan for the Navy would be to have two great naval bases on the Atlantic coast, in harbors which would receive and maintain the entire fleet and its auxiliaries; and that when it came to the question of the best locations, according to the views of the Joint Army and Navy Board, that it appeared to be self-evident that the only two places which could receive the fleet and all the auxiliaries, with harbors and anchorage sufficient for such purposes, were Hampton Roads, where we have the Norfolk Navy Yard, and Narragansett Bay, where there is a large protected harbor with two exits and possibilities such as the Joint Army and Navy Board require.

Some time in March, I think, of last year a committee from the city of Norfolk, Va., came here to appear before the Naval Committee in order to advocate the location of one of these large dry docks at the Norfolk Navy Yard, and they were informed by the committee that it was not necessary for them to discuss the question before

the committee, because the matter would not be taken up. Afterwards the Naval Committee were invited to visit Norfolk by the Norfolk Chamber of Commerce, and they did not go, as I understand, for the same reason. So the people of Norfolk have never had an opportunity to be heard before the committee and given an opportunity to show that Norfolk was the proper place to locate the dry dock, and they feel that they have not been treated exactly fair in the matter.

I will appreciate it very much if you will let me know whether you made any further recommendation to the committee in reference to the establishment of this dry dock at Philadelphia after you made your annual report; and if you did, I will be glad if you will send me a copy of what you said to the committee on the subject.

I feel that I am, in a measure, responsible for the people of Norfolk not being kept informed on the subject; but at the same time I could not help myself. As I have said before, sickness prevented my attending the meetings of the committee, and my purpose in writing this letter is simply to get at the facts, if any, which induced the committee to include in the bill the clause that I have referred to. Any information that you can give me on this subject will be greatly appreciated.

With kind regards, I am,
Yours, very truly,

Mr. LEE. Will you state what the Secretary said?

Mr. HOLLAND. This was the Secretary's reply:

NAVY DEPARTMENT,
Washington, February 17, 1913.

MY DEAR CONGRESSMAN: I have the honor to acknowledge the receipt of your letter of the 14th instant relative to a proviso in the second draft of the naval appropriation bill for the construction of a graving dock at Philadelphia.

I am not aware of what influenced the committee in having this provision made as a part of this act.

Personally I have never recommended it.

Faithfully, yours,

G. VON L. MEYER

Hon. R. TURNBULL,
House of Representatives.

Now, Mr. Chairman, permit me to state that the point of order to which Mr. Lee refers was made by Mr. Turnbull. He felt that, being the only Member on this committee from Virginia, and being absent at the time the recommendation was placed in the bill, that he had been improperly treated. He felt that the people of Norfolk ought to be heard, and, being indignant, he determined himself to make the point of order, and he told me that he would make it.

Mr. LEE. Now, Mr. Holland, you stated that Pennsylvania and Virginia should fight together?

Mr. HOLLAND. Yes, sir.

Mr. LEE. In the same bill there appeared a provision appropriating for a crane for Norfolk to cost \$350,000. Can you tell me whether any gentleman from Pennsylvania made a point of order against the appropriation for that crane, which was subject to a point of order, the same as the appropriation for the dry dock?

Mr. HOLLAND. I am not prepared to say it was subject to a point of order, but the two cases are entirely different.

Mr. LEE. I will ask the chairman of the committee to answer that question.

Mr. HOLLAND. I am not prepared to say it was subject to a point of order; the two cases are entirely different. As to the crane, there was no contest between Norfolk and Philadelphia, but as to the dry dock there was.

Mr. LEE. Then you do not believe in the theory of getting together?

Mr. BUTLER. It is my recollection that the appropriation for that crane for which we provided in the bill went out on a point of order.

The CHAIRMAN. I think the question of points of order in the House are immaterial in this committee.

Mr. LEE. I simply want to show that, although a point of order was made against the dry dock at Philadelphia by Virginia, no one from Pennsylvania made a point of order against the appropriation for this crane to be built at Norfolk.

Mr. HOLLAND. It was because there was no contest between Norfolk and Philadelphia in reference to the crane.

Mr. LEE. I dislike very much to have to take up the experts of the Navy. Admiral Stanford, the Chief of the Bureau of Yards and Docks of the Navy Department, has been quoted as an expert on this dry-dock proposition.

Mr. WITHERSPOON. Before Mr. Holland retires, I would like to ask him one or two questions.

Mr. LEE. I will be very glad to have you do that, Mr. Witherspoon, after I get through. I would like to take up first Admiral Stanford's statements.

I want to call the attention of the members of the present committee who were members of this committee when this dry dock at Philadelphia was recommended last year—I want to call your attention to the fact that it was practically on the recommendation of Admiral Stanford in regard to the cost of this dry dock at Philadelphia, and he said that we could build a 1,700-foot dry dock for \$3,000,000 at League Island which would give us two docks in one.

When the Admiral appeared before this committee a week or two ago, he said that it would cost practically \$3,000,000 to build this dry dock at Norfolk according to the Doyle plan.

I read you a short extract from the hearings before this committee in 1913:

Mr. LEE (to Admiral Stanford). Do you think that it would be possible to build the 1,700-foot dry dock for \$3,000,000?

Admiral STANFORD. Yes, sir. In view of our actual experience with the construction of the present dock (speaking of Philadelphia), the cost of the present dock included the construction of the central power plant and a large part of the power-plant equipment.

Mr. LEE. I went over this with the committee the other day to show that the figures are misleading in regard to the cost of the dry dock at Norfolk and the cost of the dry dock in Philadelphia. I asked the department some time ago to give me the figures. The cost of the present large dry dock at Norfolk, practically the same size as the dry dock at Philadelphia, was \$1,728,965.93; the cost of the present dock at Philadelphia, including the central power plant and a large part of the power-plant equipment, was \$1,471,550.67, less \$250,000 for power plant and equipment, making the actual cost of the dock only \$1,221,550.67, or a saving over the cost of the Norfolk dry dock of \$507,415.26.

Now, in regard to locating the dry dock at Norfolk, I have asked the department to send to this committee the borings of the Schmoele tract, and it has been impossible for me to get them. I say this, because when I asked the department for them I could not get them myself. I then appealed to the chairman of this committee, through his secretary, the clerk of the committee, Mr. Theall, and up to this time I have not been able to get the borings of the Schmoele tract; I

think because they are afraid the committee might see there was no bottom there on which to build this dry dock, as I understand it is very soft.

The CHAIRMAN. It was stated here the other day before the committee that they would furnish them to the committee very gladly.

Mr. LEE. I asked for them on January 13. I also asked the clerk of the committee to get them for me, but he could not get them.

Mr. THEALL. Yes; but Capt. Winterhalter said they had not been all finished yet.

Mr. LEE. I think they have some borings, but they will not give them to the committee.

Now, I would like to ask Mr. Holland as to his statement in regard to the width of the Elizabeth River in front of the proposed dry dock, whether he wishes to take Admiral Stanford's statement or the statement of Capt. Winterhalter. They are both experts

Mr. HOLLAND. Not knowing what their statements are—

Mr. LEE. Admiral Stanford said you would have 600 feet there. Capt. Winterhalter stated there would be 1,500 feet. I would be glad to have you say which one of the experts' opinion you prefer.

Mr. HOLLAND. I have not read the hearings containing Capt. Winterhalter's statements. Of course, I do not know what he said.

Mr. LEE. You just read it to the committee a few minutes ago.

Mr. HOLLAND. No; you are mistaken about that.

I can only say, Mr. Chairman, in reply to the question, that the Edwards board makes a statement in regard to that.

I have tried to get the best information I could and I have tried to be accurate in this matter, and the best information I have is that the channel is front of Dry Dock No. 3 is 600 feet, and that is sustained by the statement in the report of the Edwards Board on page 4.

Mr. LEE. I would be glad to call the attention of the committee and also of Mr. Holland to an official chart I have here. This chart was issued by the hydrographer on December 20, 1913, giving the exact depth and width of all the waters surrounding Hampton Roads and the Elizabeth River, and in front of the present Navy yard at Norfolk.

The other day when I appeared before the committee, talking on this subject, I stated that the river was 500 feet wide, allowing 100 feet in favor of Norfolk. I have here this chart, and I will be glad to ask Mr. Holland to point the distance which is marked in red ink on this map, which is an official map, at least Capt. Winterhalter so stated—it shows the depth of water and the width of the river in front of the Norfolk Navy Yard—so that this committee may know from the man who stated that Capt. Winterhalter and Admiral Stanford said it was 600 feet wide, and so that the committee may see for themselves just how wide it is at this point.

Mr. BUTLER. Will you not please state the last expression of opinion we had from the Navy Department as to the docking facilities at League Island.

Mr. LEE. Admiral Stanford figured that this dry dock at Philadelphia is a military necessity. When he was before the committee last year he made a strong statement in favor of this dry dock at Philadelphia, and when he was before the committee this year he

made a strong statement, and also stated that he was not consulted, so far as the dry dock at Norfolk was concerned this year.

Mr. Holland tells you about the great number of ships that were docked at Norfolk. In that statement he made an argument for Philadelphia. The reason that those ships were docked at Norfolk was because the docking facilities at Philadelphia are not large enough to take care of the number of battleships that might be sent there. I would like Mr. Holland to point out the depth of the water and the width of the Elizabeth River on this chart.

Mr. HOLLAND. I am not familiar with this map.

Mr. LEE. You can easily get familiar with it.

Mr. HOLLAND. I am going to answer the question in my own way. I am not familiar with this map; I have never had occasion to examine it. I can only say this, gentlemen of the committee, and I want to be perfectly fair and honest with this committee. If you will look on page 842 of the Navy Yearbook for 1913 you will find that Norfolk is there credited with a width of 525 feet in front of the dry dock. Look at the Edwards Board report, the report of the board on shore stations, and you will find that the width of the channel is given as 600 feet.

Mr. HENSLEY. In your statement, did you not say it was 400 and some odd feet?

Mr. HOLLAND. That only applies to the 35-foot dredged channel up to the yard.

Mr. HENSLEY. I just recollected that you spoke of a width of 400 feet.

Mr. LEE. I will ask the clerk of the committee to look at this map and state the width of the river from Hampton Roads to the bridge, practically a mile above the navy yard.

The CHAIRMAN. You mean the width of the river or the dredged channel?

Mr. LEE. The dredged channel, and at the navy yard the width of the river.

Mr. THEALL (examining chart). The width of the dredged channel is 400 feet and the depth is 35 feet at low tide. It runs from Norfolk to the navy yard.

Mr. HOLLAND. The fact is, Mr. Chairman—

Mr. LEE (interposing). Just one moment, Mr. Holland. I want the clerk to complete his statement.

Mr. THEALL. At the site of the proposed dry dock it is just 400 feet wide, and the channel runs up to a 7-foot depth of water.

Mr. LEE. It is not 1,500 feet wide, as stated by Capt. Winterhalter!

Mr. THEALL. Outside of the 35-foot channel?

Mr. LEE. I am talking about Capt. Winterhalter's own statement.

Mr. THEALL. The width of the channel at the site of the proposed dry dock at right angles to the channel is 400 feet, and just beyond the channel there is a depth of only 7 feet. Along the axis of the proposed site, across the channel, it is not shown on this map.

Mr. LEE. Is there any water opposite the proposed new dry dock that is 35 feet deep, outside of the 400-foot channel?

Mr. THEALL. No; the depth just beyond the 35-foot line is 7 feet, according to this map.

Mr. LEE. What does the ground show there? Is that channel pretty well up close to the bank?

Mr. THEALL. The channel is very close to the navy yard side, but there is about 400 or 500 feet of shallow water, running from 7 feet to 1 foot up to the land above the water.

Mr. LEE. Will you kindly show the committee how you get that width of water there?

Mr. THEALL. The shore line to the edge of the channel is wider than the 400-foot channel.

Mr. LEE. The white part of the map indicates water?

Mr. THEALL. The dotted part is water, too.

Mr. LEE. It is very shallow?

Mr. THEALL. Very shallow, yes; it runs from 7 feet to 1 foot.

Mr. LEE. Is it not a fact that the nearest possible chance of turning a ship is a mile and a half from the navy yard, unless the ship should happen to run her nose up in one of the dry docks a hundred feet? For instance, is there any point in front of the navy yard that a battleship could turn without putting the nose of that ship into the dry dock—would it be possible to turn the ship around without doing that?

Mr. THEALL. No place indicated on this map.

Mr. LEE. I want to call Mr. Holland's attention—

Mr. HOLLAND. You asked me a question, and you have undertaken to prove your assertions by Mr. Theall, the clerk of this committee.

Mr. LEE. No; I have simply quoted from the maps of the department and Mr. Theall whom I think is an expert.

Mr. HOLLAND. I would like to read here a letter to the Secretary of War in regard to this project, written in 1906. I would like to read just exactly what the engineers said at that time.

(Letter referred to not furnished.)

That is where the navy yard is located. My experience has been that whenever such a project is authorized the local parties always see that it is carried out to the fullest extent.

Mr. LEE. I will be glad to give the committee an exact demonstration of the Elizabeth River in front of the navy yard at Hampton Roads.

I have here a miniature plan of the Elizabeth River and also of the present dry dock, which is large enough to take the largest ship built or building, and also a miniature plan of the proposed dry dock 1,000 feet long.

I simply show this plan so that the committee will not be deceived by misleading figures and a variety of opinions as to the width and depth of the Elizabeth River at that point.

The map furnished by the hydrographer, dated December 20, 1913, shows that the Elizabeth River is 11 miles from Hampton Roads, the distance from the navy yard, which is 400 feet wide and 35 feet deep. I want to ask any member of this committee, in fact, I would rather have Capt. Winterhalter, the expert of the Navy Department, here to answer the questions and point out to this committee if this new dry dock is built at Norfolk, and the two dry docks were occupied by battleships, and the *Texas* or the *New York*, or any other battleship which is over 400 feet long, or 573 feet long, which is the length of the *Texas*, how such a ship could get to sea without backing out of the river?

I have here a model of a ship, representing the *New York*, which is 573 feet long and with a width of 95 feet 2½ inches. I will place the *New York* in the present large dry dock at Norfolk.

I have here also a small sized model of the *Arkansas*, which has a length of 562 feet and a width of 93 feet 2½ inches. I will place this model of the *Arkansas* in the proposed new dry dock. I have here also a miniature model of the *Texas*, a sister ship of the *New York*. I will place this model of the *Texas* opposite the navy yard at Norfolk, having repairs made.

I now ask Mr. Holland, who I think knows more about the Elizabeth River than probably anybody on this committee, and who represents that district, if he will kindly step nearer to the table. I would like him to point out some things on this chart to the committee.

MR. HOLLAND. I will look at your diagram, but I am not familiar with it.

MR. LEE. I wish to show the committee—if you will notice in the present old dry dock, the battleship *New York* is in there for repairs. In the proposed new dry dock, the *Arkansas* is there for repairs. The gates of both dry docks are closed. The battleship *Texas* is at the navy yard and has been repaired and has been ordered to sea. The *Arkansas* is in one dry dock and the *New York* is in the other. I would be very glad if the gentleman from Virginia or any expert in the Navy will take the *Texas* to sea without backing her down the river. I would be glad to have some member of the committee attempt to do that, also, if it is possible.

MR. HOLLAND. So far as that is concerned, I do not know whether this is an accurate model of that locality or anything about it.

MR. LEE. I would be glad to have a rule to measure it.

MR. HOLLAND. I do not think it could be accurate if it was prepared in accordance with this map.

MR. LEE. It was prepared in accordance with this map and is correct.

MR. HOLLAND. Then I do not think it is accurate to start with. I am not a naval expert, and, if I were, I would not undertake to tell you how you are going to handle boats or anything of that kind from this model. It would be foolish for me to try to do that.

THE CHAIRMAN. I do not think this is the proper time to have a discussion of these matters. The committee wants to get any facts that either side desires to state. The discussion and arguments can take place when the committee takes the matter up for decision or on floor of the House.

MR. BUCHANAN. Did I understand you to say, Mr. Holland, that the labor cost at Norfolk is less than at Philadelphia?

MR. HOLLAND. Admiral Stanford says so.

MR. BUCHANAN. Do you know what the reason is?

MR. HOLLAND. He says there is a less rigorous climate there.

MR. BUCHANAN. And that results in more efficiency among the workmen?

MR. HOLLAND. I suppose it does. I certainly know that we have a very efficient lot of workmen at that yard.

MR. LEE. Mr. Holland disputes the accuracy of my model of the Elizabeth River and the models of the battleships. I would be glad

to have the clerk of the committee make measurements as to their correctness.

Mr. HOLLAND. I want to say this, Mr. Chairman: I did not dispute the accuracy of them. I simply said I did not know whether they are accurate or not. I am not a naval expert, and I am not here to testify as to the movements of naval vessels. It is not fair to undertake to ask me questions that ought to be answered by naval experts and not by a layman.

Mr. LEE. I will simply ask the clerk of the committee to measure the models of the battleships I have and measure also the model of the river.

Mr. HOLLAND. I want to protest against this. It does seem to me that it is hardly fair to pursue an examination in this way and undertake to get the clerk to make statements in accordance with this map. There is no reason for disputes as to the width of the channel. I have made one statement in regard to it and Mr. Lee has made another, and the map makes still another showing. Let this committee select some impartial man not connected with Mr. Lee and not connected with me, and not connected with the committee, and let that man take accurate measurements and bring them here.

Mr. LEE. Do you dispute the map issued by the hydrographer's office?

Mr. HOLLAND. That is not a fair question. I have simply said that, as indicated on this map, the measurements do not appear to be right.

The CHAIRMAN. The committee wants to hear statements of fact. We do not care for disputes and discussions between the different sides. If there are any facts the gentlemen desire to present in regard to the matter, let us lay aside argument until the time for argument comes and present whatever facts you may desire to present to the committee.

Mr. LEE. I have here a model, and, to show I have made the models in exact accordance with the map issued by the hydrographer's office, I ask the clerk of the committee to measure the width and length of the models.

The CHAIRMAN. You have made that statement, and it is in the record. It is not disputed.

Mr. LEE. I would like to have the clerk measure them. The scale is 1 inch to 100 feet.

The CHAIRMAN. Do you say it is 4 inches wide?

Mr. THEALL (after measuring). It shows 4 inches.

Mr. STEPHENS. I think, Mr. Chairman, the committee is willing to accept that statement and let Mr. Lee make his argument.

The CHAIRMAN. This is not the time for argument. This is the time to put facts into the record. We do not care for an argument.

Mr. LEE. There is no argument as to the width and depth of the river.

The CHAIRMAN. There is no dispute as to the depth. It is 35 feet wide for the 400-foot channel and 30 feet wide for the 500-foot channel. That has been shown by the official records that have been shown time and time again.

You want to show that the conditions are such that the large war-ships could not turn around there?

Mr. LEE. Yes, a large warship could not turn around there without putting her nose a hundred feet into the dry dock, and if both of the dry docks were occupied it would be impossible for that ship to get to sea without backing down the Elizabeth River.

Mr. ESTOPINAL. It is to be presumed, I suppose, that the river would not be widened at that point to allow the ships to turn around?

Mr. LEE. Oh, no; we are just talking about the present conditions.

Mr. ESTOPINAL. Would the officers of the Navy allow ships to go in there; that is not reasonable to expect, is it?

The CHAIRMAN. It has been stated to the committee in official reports that it is wider at the basin. There is a basin in front of the docks that makes it 600 feet or more.

Mr. BUTLER. I understood you to say that within the last year ships of a certain size had been docked at this point?

Mr. HOLLAND. Within the past [redacted] or three months the *Texas*, which is 565 feet long, and the *Wyandott*, which is 568 feet long, have both been docked at the new dock.

Mr. LEE. I will ask the chairman to repeat the statement made by Capt. Winterhalter when he stated the other day before this committee that he turned the *Louisiana* around at Norfolk and was compelled to put her nose a hundred feet into the dry dock so that he could turn that battleship around.

The CHAIRMAN. It is not necessary for the chairman to repeat what anyone has said, because it is taken down and printed in the record, and anyone can see for himself exactly what was said.

Mr. LEE. I want to ask at this point if the dry docks were occupied, whether any naval expert could take a battleship 573 feet long and turn that ship around in a channel 400 feet wide without, as Capt. Winterhalter stated, running her nose up into the dry dock a hundred feet? Now, if the dry docks were both being used by battleships for the purpose of being repaired, I would like to ask how it would be possible to turn the *Pennsylvania*, which is 623 feet long; how it would be possible to turn that ship around in a river which is only 400 feet wide?

Mr. WITHERSPOON. When the dry docks have vessels in them; is that what you mean?

Mr. LEE. Yes.

Mr. WITHERSPOON. Did you ever see a case in your life where two of these dry docks had vessels in them, and another one was there also?

Mr. LEE. I will quote Mr. Holland on that. He said that when the *Vermont* was crippled recently, the vessel which convoyed the *Vermont* to Norfolk was also compelled to go to the dry dock, and the authorities at Norfolk, the commandant of the yard, was compelled to take the *Vermont* out of the dry dock so that the other vessel could go in and have her repairs made first. On that occasion both dry docks would have been occupied, and I simply ask you, Judge Witherspoon, as a man who has been to all of the navy yards, who, from your argument before the committee with the experts, you seem to be quite an expert yourself.

Mr. WITHERSPOON. I admit that.

Mr. LEE. I would be glad to have you demonstrate to the committee how you would turn a battleship around, a battleship which is 573 feet long, in a channel 400 feet wide?

The CHAIRMAN. I want to renew the statement I have made twice already, that this is not the time or the place for the argument of the abstract questions and theories, and things of that kind. If there are any facts that you desire to go into the record of the hearing, relating to these matters, put them in, and let us take up the arguments when the time for argument comes.

Mr. HOLLAND. I would like to make this request of the committee: I do not want any dispute, so far as I am concerned, as to the width and depth of the channel in front of the Norfolk yard now or when contemplated improvements are completed. I am going to ask this committee to ask the War Department to request the local engineers down there, or any other engineer they may desire to send there, to take the measurements of the width and depth there and make a report, not only as to the present situation, but as to the condition after the proposed improvements are made.

Mr. BROWNING. There is one question I would like to ask Mr. Holland. In his previous statement he spoke of the 1,700-foot dry dock in Philadelphia, and he stated, I think, that the Government had made no such request, and there was no necessity for any such a dry dock. As I understand, the 1,700-foot dry dock in Philadelphia is practically two dry docks, that can be used at the same time, one 1,000 feet long and the other 700 feet long, giving in that 1,700-foot dry dock two dry docks, which were very badly needed at Philadelphia. One of them is 1,000 feet long and the other is 700 feet long, and at the same time, when the docks are not in use, it gives an outlet from the back basin into the Delaware River. We get these two docks there, and also an outlet from the back basin to the Delaware River. It is not one dry dock 1,700 feet long, but two docks, one of them accommodating the largest ship in the Navy that is built or building, and another smaller ship can also be put in the other dock.

Mr. HOLLAND. I will simply say that the understanding I had from the Navy Department, not only from the present officials but from the former officials, was that we had no need for more than one dry dock on the Atlantic coast.

Mr. BROWNING. One new dry dock to take in the large ships.

The CHAIRMAN. Three dry docks have been suggested.

Mr. KELLEY. In talking with some of the officers at Norfolk—I do not recall which ones—the opinion seemed to be that if this new dry dock were put in way above the present navy yard, it eventually would involve moving the navy yard up to the dock. Whether or not that has been gone into sufficiently to determine what that would cost—

Mr. HOLLAND (interposing). I have not gone into that at all, and would have to follow the recommendations of the department.

Mr. KELLEY. You have not any information as to what that would ultimately cost?

Mr. HOLLAND. No, and I have no idea that that is the idea of the department. I have heard it stated, but whether anything of the kind has been absolutely recommended, I do not know.

Mr. WILLIAMS. You do agree with one proposition, and that is that a dry dock of these dimensions indicated is needed on the Atlantic coast; you take that position, do you not?

Mr. HOLLAND. Of course, I do know that the naval officials say that one is necessary.

Mr. WILLIAMS. You and Mr. Lee insist that one is necessary?

Mr. LEE. Yes, sir. I would like to ask Mr. Holland whether he knows what plans or suggestions the Navy Department have in regard to the development of the Schmoele tract, in regard to the matter of trying to place a dry dock on that tract?

Mr. HOLLAND. I do not know. I have heard from time to time that there have been certain plans of development. I believe the piece of property was purchased in 1904. It has never been developed and various officers have submitted plans of development, none of which, as I understand it, have ever been adopted by the department.

Mr. LEE. I have been informed that at least one dozen different plans have been submitted in regard to the development of this particular location.

In the hearings, when the naval expert, Admiral Stanford, appeared before the committee, we had the Doyle plan, and after cross-questioning Admiral Stanford I found that the department had changed the location of the dry dock and placed it very close to the old dry dock, just on the edge of the Smalley tract.

In view of the fact that I have asked for the borings and soundings at that particular point, it would seem to me that there must be some trouble with the foundations of the Smalley tract, and in view of the fact that the Pearl Harbor Dry Dock has had a lot of trouble with the bottom it would seem to me that this committee should have the borings of the Smalley tract before they would even think about developing that particular tract, as far as a dry dock is concerned.

I wish to ask Mr. Holland if this map which is furnished by the hydrographer is an official map?

Mr. HOLLAND. Oh, Mr. Lee, I presume it is. I am not familiar with your map.

Mr. LEE. It is not my map. It is furnished by the department.

Mr. HOLLAND. I have never seen the map before. The only thing I can say is this, that from the best information I have, the depth of the water and the width of the channel as indicated on that map are not official. I may be wrong and the map may be right. The members of the committee can verify either that map or my statement. The committee can send an engineer down there and let him furnish the information.

Mr. LEE. This map was made by the engineers.

Mr. BUTLER. That map is official, and I think the committee will accept it as an official Government map.

Mr. LEE. When Capt. Winterhalter was before the committee he questioned a blue print which I had here in regard to the waters in front of the navy yard at Norfolk, and then, when I asked him what he wanted, he said he wanted a navigator's map, saying that he could not go by a blue print. I have here a navigator's map, which gives the exact depth and width of all the waters in that location.

Mr. WITHERSPOON. Do you take the position that when a document is issued at the expense of the Government and paid for by funds

taken out of the Public Treasury for that purpose, that that makes it official?

Mr. LEE. I do.

Mr. WITHERSPOON. Do you think the Navy Yearbook is official?

Mr. LEE. Judge, from the way you handled it and the remarks made afterwards, I think the department said it was not official.

Mr. WITHERSPOON. I do not care about what the department said. I am getting at the facts. You say that map is official because the people pay the bill. Is the Navy Yearbook official for that reason, too?

Mr. BROWNING. Is the Navy Yearbook paid for by the Government?

Mr. BUTLER. It is not recognized as an official document; it is a Senate document.

Mr. BROWNING. It is compiled by the clerk of the Committee on Naval Affairs of the Senate.

Mr. WITHERSPOON. I want to know whether, because the Government prints it, that that makes it official?

Mr. LEE. This map which I showed to the committee is the map used by the navigators who handle the battleships, which the Judge often stated on the floor of the House cost \$15,000,000, and therefore I think it is very accurate.

Mr. WITHERSPOON. I did not ask you about its accuracy at all.

Mr. LEE. I think Mr. Holland should amend his statement to the committee in regard to the *Texas*, when he said that the *Texas* would draw so much water that it would be impossible for the *Texas* to get up the river if it had not more than 30 feet of water.

Mr. HOLLAND. You are mistaken about that. The only reference I made to the *Texas* was to say that the *Texas* was 500 and odd feet long and that that ship was successfully docked at the Norfolk yard.

Mr. LEE. I thought you said that Admiral Watt had stated that when she was without her stores and equipment she would draw practically 33 feet of water.

Mr. HOLLAND. No; you are mistaken. I have Admiral Watt's letter here. I think we ought to be fair to Admiral Watt as well as to the others.

Mr. LEE. I want to be fair to everybody, and stand corrected.

Mr. HOLLAND. If you will let me read the letter you will see just what he said.

Mr. HOLLAND. This is what Admiral Watt says:

(Letter not furnished.)

Mr. LEE. He says 30 feet.

Mr. WITHERSPOON. I would like to ask you a question on that point. Suppose one of the battleships should get in a battle and get some holes knocked into it by the enemy's shells, and, as some of the experts have told us, that would increase the draft 10 feet. That would make the battleship draw about 39 feet and 8 or 10 inches. How would you ever get such a battleship up to Norfolk?

Mr. LEE. I will answer that question by saying that would be an easy thing for the department to do.

Mr. WITHERSPOON. Why?

Mr. LEE. The department would simply send relief ships to the crippled ship and take off her stores, and take off all the heavy

weights possible, and have her taken to the Philadelphia Navy Yard or to the Norfolk Navy Yard without any trouble.

Mr. WITHERSPOON. Let me ask you a question. I want to see if this is right. Take a ship drawing 39 feet and 8 or 10 inches, and then remove all of your stores, do you know how much that would reduce her draft?

Mr. LEE. I am informed by the experts in the Navy that there would be no trouble at all in handling a crippled ship—

Mr. WITHERSPOON (interposing). Oh, I did not ask you about trouble. I am asking you about the facts. How much would that reduce her draft, do you know?

Mr. LEE. That would depend on how bad the ship was damaged.

Mr. WITHERSPOON. You might take everything out of her, and you could not get her to a single navy yard we have except Puget Sound; is not that a fact?

Mr. LEE. In that case it would be necessary to take one of our floating dry docks to assist the crippled ship, and if we have not one big enough I am in favor of building one big enough to look after work of that kind.

Mr. WITHERSPOON. Is it not a fact that we are fixing all these dry docks—

Mr. LEE (interposing). I just want to read one little statement before the judge gets through.

Mr. TALBOTT. We want to adjourn.

Mr. LEE. It has been shown to this committee by the experts of the Navy Department that Capt. Grant has a record for navigation which is excellent. To offset all statements as to whether the largest battleship in the Navy at the present time could get to Philadelphia I read the following telegram from Capt. A. W. Grant, who is in command of the *Texas* at this time.

Mr. WITHERSPOON. We all know that.

Mr. LEE. In answer to a telegram which I sent to Capt. Grant on January 5, 1914, I received the following answer:

NAVY YARD,
Portsmouth, Va., January 6, 1914.

HON. ROBERT E. LEE,
Washington, D. C., House of Representatives.

The dreadnaughts *Texas* and *New York* can go to Philadelphia Navy Yard without any trouble, but can not enter the present dry dock there. They are too large for the dock.

Capt. GRANT.

Mr. TALBOTT. I do not think the question about the depth of the channel at Philadelphia or Norfolk enters into this case, because the depth of the channel has got to be protected as long as there is a navy yard there.

Mr. LEE. I wish to say to my friend Mr. Holland, of Virginia, when he quoted from Mr. Moore, of Philadelphia, that the river was not deep enough on that particular point, and for the benefit of the committee I want to show that men who are placed in charge of the largest battleships afloat can take those battleships to League Island Navy Yard without any trouble, and that the Delaware River is deep enough.

Mr. TALBOTT. My contention is that both channels have to be maintained because they both have navy yards.

The CHAIRMAN. Is that all you want to put in, Mr. Lee?

Mr. LEE. Just one minute. When the *Vermont* was recently crippled it was stated by some of the experts that it would be impossible to take the *Vermont* to the Philadelphia Navy Yard in her crippled condition. I again wired Capt. Grant and asked him this question:

Capt. A. W. GRANT,
(Care of Newport News Shipbuilding Co.)
Newport News, Va.:

If you were in command of the *Vermont* when she was crippled recently could you have brought her in that condition to the Philadelphia Navy Yard? Kindly wire me your answer.

ROBERT E. LEE, M. C.

To this I received the following reply:

NEWPORT NEWS, VA., January 31, 1914.

Hon. ROBERT E. LEE, *Washington. D. C.:*

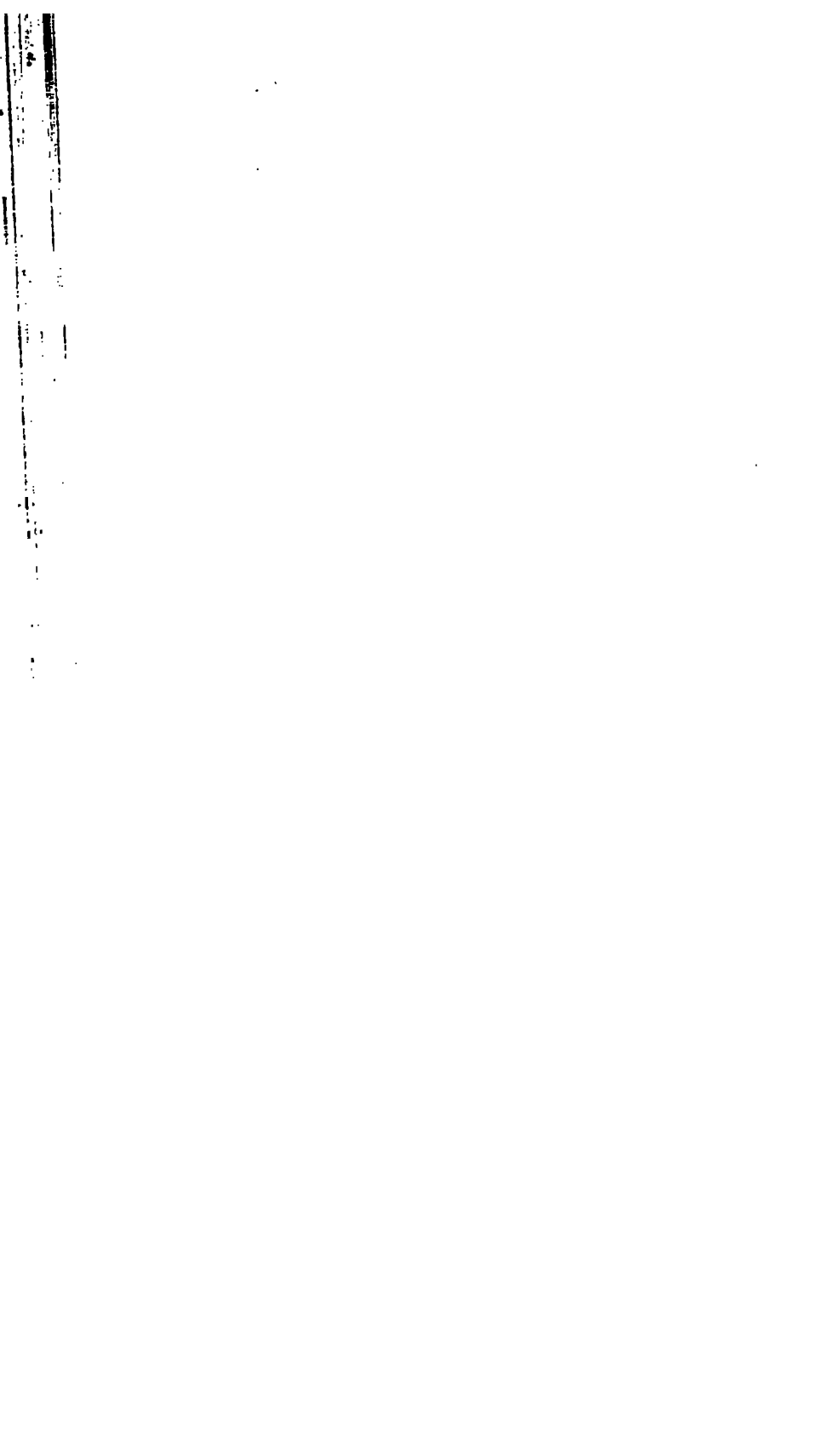
I could have taken the *Vermont*, when recently crippled, to Philadelphia as easily as to any other Atlantic port.

CAPT. GRANT.

Mr. HOLLAND. Is that the same Capt. Grant who was commandant of the Philadelphia Navy Yard last year and whose letter——

Mr. LEE (interposing). Yes, sir; that is the same Capt. Grant, who is the commandant of the Philadelphia Navy Yard and who was the commandant of the Norfolk Navy Yard for, I think, probably two years, so that the gentleman is well informed about the two yards.

(Thereupon the committee adjourned until to-morrow, Thursday, February 12, 1914, at 10.30 o'clock a. m.)



[No 16.]

**COMMITTEE ON NAVAL AFFAIRS,
Friday, February 13, 1914.**

The committee met at 10.30 o'clock a. m., Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. The committee will come to order.

Some of the Members of the House had expressed a desire to appear before the committee to present to the committee for its consideration certain matters that they were interested in, and we have with us this morning Mr. Kettner, of California.

**STATEMENT OF HON. WILLIAM KETTNER, REPRESENTATIVE
IN CONGRESS FROM CALIFORNIA.**

Mr. KETTNER. Mr. Chairman and gentlemen, I would like to invite your attention to page 42 of your budget, wherein the department recommends \$50,000 for fuel-oil storage and \$45,000 for coaling towers.

Mr. WILLIAMS. What page is that?

Mr. KETTNER. Page 42.

I thought it might be well, Mr. Chairman, for me to appear before your committee and give you a few facts regarding San Diego and the coaling station which was started in 1900. The department saw the wisdom of having a coaling station in southern California and they set aside \$200,000 in 1904, I believe, and completed the docks. I think it would be safe to say that they have one of the finest wharves there that you will find anywhere in the country, but for some reason or other, which I have never been able to find out, they never did complete the coaling station. I have learned, or rather understood, from the department that money had been set aside to complete it in 1909, but it was diverted elsewhere. I presume that circumstances arose that made it necessary.

But to give you an idea of what the department thinks of San Diego, I will quote from a letter written by Admiral Dewey to the General Board.

Mr. BRITTEN. May I ask how much of that \$200,000 was spent?

Mr. KETTNER. It was all spent.

The CHAIRMAN. In the construction of piers?

Mr. KETTNER. On the piers.

Mr. BRITTEN. They merely got as far as the piers?

Mr. KETTNER. Yes; and stopped.

Mr. BRITTEN. And built no part of the superstructure?

Mr. KETTNER. No superstructure at all. That is what this recommendation is for, and that is what I am speaking for now.

This is a quotation from the letter of Admiral Dewey to the Army Engineering Board dated December, 1912:

The geographical situation of San Diego, 450 miles south of San Francisco, close to the Mexican border, and the nearest United States port to Panama on the Pacific coast, points to its being a frequent port of call for the Navy as well as for commercial

vessels when the canal is in operation. The Navy now has a coaling wharf at San Diego and the harbor is used as a base for a part of the drills of the Pacific torpedo flotilla; the capital ships of the Pacific Fleet are at this date engaged in target practice in the immediate vicinity. The General Board believes it probable that the naval use of this port will increase in the future rather than the reverse. There is room in the inner harbor for at least 16 capital ships in quiet, perfectly protected water, and there is now a limited coast defense.

That is from Admiral Dewey to the board of Army engineers. So I think there is no doubt regarding the harbor.

Col. Taylor, a few days ago, when he was before our committee, stated, when I asked him what he thought of San Diego Harbor, that it is one of the finest harbors of this country; he said it was first class. We have a depth of 35 feet at low water and the bay is 22 square miles in area.

Mr. ROBERTS. Is that 35 feet over the bar?

Mr. KETTNER. Over the bar; yes, sir.

Mr. ROBERTS. How much water is there up there at these wharves, the coal wharf?

Mr. KETTNER. At the wharf there is 30 feet.

Mr. BRITTEN. At low tide?

Mr. KETTNER. At low tide.

The CHAIRMAN. How much?

Mr. KETTNER. Thirty feet.

Mr. ROBERTS. Does that wharf go out to the channel?

Mr. KETTNER. That wharf goes out to the channel.

Mr. ROBERTS. You have more water at the pier than you have inside?

Mr. KETTNER. Yes; we have 32 feet inside now; that is, when the present contract is finished. The river and harbor act of 1912 appropriated \$245,000 to make it 32 feet.

Mr. ROBERTS. What is the width of the channel?

Mr. KETTNER. Six hundred feet.

Mr. ROBERTS. How far up in the harbor does that run?

Mr. KETTNER. That runs about 2 miles.

Mr. ROBERTS. From the entrance?

Mr. KETTNER. From the entrance; but after you get into the harbor there is 50 or 60 feet of water.

The CHAIRMAN. What is the width of the basin that has 30 feet of water?

Mr. KETTNER. Well, at the pier it is 570 feet, and as you cross the bar it is 600, and then it widens out to 800, and after you get in farther it is a thousand. I do not know just how wide it is, but at the wharf, where the big vessels from the Hawaiian Line land, they draw 28 and 30 feet of water—it is about 2 miles from the entrance.

The CHAIRMAN. What I was trying to get at is whether you could give us some idea of the dimensions of the bay in there that would have water sufficiently deep to anchor large vessels—how large an area.

Mr. KETTNER. As Admiral Dewey states, there is room there for 16 capital ships.

The CHAIRMAN. I know that, but I think you just stated that you did not give us the area.

Mr. BRITTEN. I think he said something about its being 22 square miles.

Mr. KETTNER. Some of that is shoal water.

Mr. STEPHENS. If that area is considerable, it could be made much out of by dredging. Mr. Kettner can get the facts and put them in the record.

The CHAIRMAN. Certainly, he may put it in the record.

Mr. ROBERTS. The admiral's letter speaks of room for 16 capital ships, and says that there is now a limited coast defense. Just what is the coast defense?

Mr. KETTNER. We have four 10-inch guns, which were installed in 1896.

Mr. ROBERTS. They are on Point Loma?

Mr. KETTNER. They are on Point Loma.

Mr. ROBERTS. Inside or outside?

Mr. KETTNER. Inside.

Mr. ROBERTS. Is there anything south of there, at North Island?

Mr. KETTNER. Yes, I believe there are. They have two mortar batteries there now.

Mr. ROBERTS. How far down the coast are they?

Mr. KETTNER. They are just across the channel from—

Mr. ROBERTS (interposing). On North Island?

Mr. KETTNER. Yes, on North Island.

Mr. ROBERTS. Is it contemplated to add to the coast defense there?

Mr. KETTNER. You will get a better idea by reading Gen. Weaver's report.

Consideration is invited to the increasing importance of San Diego, Cal., due to the rapid growth of its population, the deepening of its channel, and the position it will occupy with relation to trade through the Panama Canal. It is recommended that the fixed defense of this harbor be strengthened by two mortar batteries of four mortars each.

Mr. ROBERTS. That is in addition to what is now on North Island?

Mr. KETTNER. Yes.

Mr. TALBOTT. That applies to the Army?

Mr. KETTNER. Yes.

Mr. ROBERTS. Is there anything on the north side of Point Loma?

Mr. KETTNER. No. That is the object of the two mortar batteries.

Mr. WILLIAMS. Are those at the point of the entrance to the bay?

Mr. KETTNER. Yes.

Mr. WILLIAMS. How far is that from San Diego?

Mr. KETTNER. It is in the city limits, about 5 miles from the post office.

Mr. STEPHENS. Mr. Kettner, it is not 5 miles in a direct line, is it?

Mr. KETTNER. No.

Mr. STEPHENS. That is the distance by a circuitous route, around the bay?

Mr. KETTNER. That is by a circuitous route. Thank you, Mr. Stephens.

Mr. Chairman, I just thought I would call your attention to these facts.

The CHAIRMAN. The committee is glad to hear your suggestions, and if you have anything you want to put in your hearings just incorporate it in your hearings; just hand it to the stenographer.

Mr. KETTNER. I might call the committee's attention, if you will permit me, to an editorial of the San Diego Union.

The CHAIRMAN. I think they have about 9,000 tons there.

MR. KETTNER. At the present time?

THE CHAIRMAN. Yes.

MR. KETTNER. Yes. And that is dumped on the shore.

MR. ROBERTS. Is that coal all stored in the open?

MR. KETTNER. It is all stored in the open; yes, sir.

MR. ROBERTS. Do you propose to store it in the open if you get the colliers?

MR. KETTNER. No.

MR. ROBERTS. Then, this \$45,000 is to reconstruct the colliers?

MR. KETTNER. Yes; to complete the plant.

MR. ROBERTS. I supposed that \$45,000 was to handle it.

MR. KETTNER. To handle it; I presume to store it.

MR. STEPHENS. The substructure is already in?

MR. KETTNER. Yes; the substructure has already been completed.

THE CHAIRMAN. It is spoken of there as a steel coal tower.

MR. KETTNER. Yes.

THE CHAIRMAN. You may insert that editorial if you desire.

(The paper referred to is as follows:)

[From the San Diego Union.]

WHY THE COALING STATION IS NEEDED.

That it was a mistake not to complete the San Diego coaling station is once more evidenced, this time by the fact that the cruiser *Denver*, under orders to proceed to Acapulco to protect American interests, must delay her departure until she obtains a supply of fuel from a collier which is on her way to this port. The orders to the *Denver* were issued a day or two ago. To make ready and start on the long voyage southward would have been a task of only a very few hours had there been a supply of Government coal available. There being none, the cruiser must delay her departure until a slow collier ordered south for the purpose of coaling the warships can reach this port.

Of course it is conceivable that the *Denver's* mission is not one that requires haste. Still, in view of the known facts—that the American consul at Acapulco expressed concern for his countrymen there and requested the sending of a warship—it is natural to suppose that prudence would dictate the dispatch of the vessel at the earliest possible moment.

Had the coaling station here, for which at heavy expense a fine wharf has been built, been completed and supplied with fuel, the *Denver* could have been on her way to Acapulco almost immediately after the decision to send her south was reached. The incident is simply an object lesson of the fact that the San Diego coaling station, if completed and stocked, would serve a useful purpose, and that in abandoning it a mistake was made.

Of course, if San Diego were a port which warships seldom visited there might be no special need for providing them with facilities for coaling. But during much of the time naval vessels are in the harbor here. On account of its geographical position it is a convenient point from which to dispatch them when trouble in Spanish America makes their presence desirable in southern waters. Besides, it is in this vicinity that the vessels of the Pacific fleet hold their annual target practice, San Diego Harbor being their rendezvous. So it has often happened during recent years, and will doubtless happen again, that when a warship is needed to protect American lives and property on the southern Pacific coast, the point of departure is San Diego.

One likes to credit the naval authorities with full knowledge of their business. Nevertheless, there are some matters that to the civilian mind appear peculiar. One of these is that when, in response to the earnest appeal of an American consul, a warship is ordered to Mexican waters, it should be necessary for a collier to be sent 600 miles to coal the vessel because, although years ago the Government spent much money in the construction of a station that would meet the emergency, the work as originally planned was left in abeyance.

It is not improbable that the delay, caused solely by the necessity of waiting for the collier, will have no serious consequences. One will certainly hope so. Still, the incident strongly suggests that the completion of the coaling station here would prevent in future delays that might prove serious.

Mr. ROBERTS. How much land is there in this coaling plant?

Mr. KETTNER. The Government owns all of Point Loma. That is, I say all—the point from where the wireless station begins. I presume they have several hundred acres.

Mr. ROBERTS. What is the character of that land? Is it entirely level?

Mr. KETTNER. No; it has a gentle slope to the bay.

Mr. ROBERTS. No steep points?

Mr. KETTNER. Yes; there is quite a stretch of land between the bay and where the point rises.

Mr. STEPHENS. Is that mesa land?

Mr. KETTNER. It is mesa land; yes.

Mr. ROBERTS. How far inland from the wharf is this coaling station?

Mr. KETTNER. About 400 feet.

Mr. ROBERTS. There is plenty of land there for other things?

Mr. KETTNER. Yes, indeed. Not only for coal but for oil tanks.

Mr. ROBERTS. Are there any oil tanks there now?

Mr. KETTNER. No; we have nothing there except the coaling station; that is, only the wharf, the substructure, and this pile of coal on the ground.

Mr. ROBERTS. Do you know whether they have any barge there to take the coal from the pier out to the ships?

Mr. KETTNER. No. All of the ships can go up to the wharf.

Mr. ROBERTS. What was that you said about the Denver having to wait five days?

Mr. KETTNER. This was before the department had coal on this wharf.

Mr. ROBERTS. Is the coal on the wharf or inland?

Mr. KETTNER. It is inland. It is on the soil.

The CHAIRMAN. Mr. Kettner, the committee is glad to have heard you.

Mr. KETTNER. I see Mr. Hayes is here. We are all interested in submarines. We have a coast line, I believe, as large if not larger than the Atlantic, and there has been a great deal said in the last few years about coast defense, and the committee ought, we think, to take this up very seriously, because we are not protected there from any foreign country, and a foreign navy could come to the Pacific coast at the present time and do just about as they pleased.

Mr. WILLIAMS. Mr. Kettner, before you retire, these two items you mention here, you are not wishing to change?

The CHAIRMAN. To hold them in?

Mr. KETTNER. I wanted to hold them in; I wanted to show the way we felt about it in San Diego.

Mr. ROBERTS. Are there not submarines assigned to San Diego now?

Mr. KETTNER. There are generally from five to seven. I presume they are there now. I have not been there for some time, but while I was there it was seldom you could go into the harbor without finding a cruiser or submarine.

Mr. ROBERTS. Are there not some submarines stationed there?

Mr. KETTNER. I do not know that that is the permanent station; they are there a great deal.

Mr. HAYES. I think they keep them up and down the coast.

Mr. Chairman, I wish to thank you and the committee and sincerely trust that you will see your way clear to making these improvements.

**STATEMENT OF HON. EVERIS A. HAYES, REPRESENTATIVE
IN CONGRESS FROM CALIFORNIA.**

Mr. HAYES. Mr. Chairman and gentlemen of the committee, Mr. Humphrey, of Washington, was to appear here this morning with me, but he was out of the city.

The CHAIRMAN. I would state that Mr. Humphrey had spoken to the chairman about wishing to appear before the committee, and I told him that he could, and I notified him yesterday, but found that he was out of the city.

Mr. HAYES. Yes.

The older members of the committee will doubtless remember that it has been our habit in the last four or five years to appear before the committee and urge upon them the feeling of the Pacific coast that they were neglected in the matter of protection from any enemy. Twelve years it is now, nearly, that this subject began to be agitated by the people of the Pacific coast. In 1902 a request, and an urgent request, was made to the committee and to Congress that our duties in the matter of protection be more seriously considered. In 1910 the Pacific coast delegation appointed a committee of seven men, with Senator Miles at the head, to take the matter up with the department and with the committee, and I was a member of that committee, and Mr. Humphrey also, and we took the matter up with the department, and went over it very carefully, and the ultimate conclusion was that if we could secure the 50 submarine boats for the Pacific coast we would be absolutely protected from the encroachment of any enemy, and we therefore appeared before this committee and asked the committee to provide for 10 submarines a year to be built on the Pacific coast until 50 should be provided; and every year since that we have urged that the committee consider that as a necessity, almost, for our protection.

As is perhaps known to all of you, no battleships are ever stationed in the Pacific Ocean. We have a few cruisers over there, some protected, and a few armored cruisers, and some torpedo-boat destroyers.

The CHAIRMAN. Will you permit me to interrupt you in this a moment?

Mr. HAYES. Certainly.

The CHAIRMAN. After the completion of the canal and its operation next year, do you think the conditions will be very materially changed?

Mr. HAYES. I do not think it will.

We have not the votes out there, and therefore we do not expect the battleship fleet to stay there or to be there. That is the situation exactly. But one of these battleships costs as much as 25 of these submarines and the battleships would be comparatively of no protection to the coast as compared with what a lot of submarines will be, and that is what we are looking for—protection.

Mr. ROBERTS. How many submarines are there now?

Mr. HAYES. There are built and building 12 submarines on the Pacific altogether; there are 4 in the Philippine Islands, and 12 already built and building on the Pacific coast.

Mr. WILLIAMS. Let me ask one question right there, Mr. Chairman.

Would it be practicable to take the submarines from the Atlantic, or will it be when the canal is built, around to the Pacific coast?

Mr. HAYES. That will never be done, because it costs too much to take them around. They are steamed too slowly. I think the fastest of them goes about 11½ knots an hour. They never have been taken around except the first four that had only 200 tons displacement. They were taken on shipboard and carried from the East to San Francisco.

Mr. ROBERTS. Were there not four taken to the Philippine Islands?

Mr. HAYES. I think they were carried on shipboard. I think they were carried to the Pacific by rail, and carried across the ocean to the Philippine Islands. They are small boats.

Of course, our coast is protected by fortifications. The city of San Francisco is amply protected as far as fortifications can protect it. That does not protect the coast and other cities, which would be subject to attack from an enemy, and there is nothing to prevent any enemy from landing anywhere along the coast, in spite of all of those fortifications.

I think it is generally conceded by everybody that has thought or studied on this subject that the best coast defense that there can be is a fleet of submarine boats. I believe that the naval experts agree that they keep five or six together, where they could operate not one alone or two alone, but five or six, and that five or six at a harbor, for instance, could prevent any hostile fleet from coming into that harbor. No hostile fleet would think of approaching a harbor that was protected by five or six of these submarines, and a flotilla of these submarines could patrol up and down the coast, in case of emergency, and protect the Pacific coast from the approach of any hostile fleet.

Mr. STEPHENS. Mr. Hayes, you do not mean to say that 50 submarines would be a complete defense?

Mr. HAYES. I think it would.

Mr. STEPHENS. I think that is an overstatement.

Mr. HAYES. Those were the figures given us, when we talked about that, and I think by looking over the testimony of the naval officers and their recommendations, you will find that that is their opinion still, that 50 submarine boats would adequately protect us.

Mr. ESTOPINAL. They would patrol the coast.

Mr. HAYES. Yes; and they are sufficiently mobile so that they can be moved from place to place, and these rapid-running destroyers could keep them posted as to the place where they should come in time to be of service.

Mr. ROBERTS. The wireless could do that.

Mr. HAYES. Yes; that is true.

Mr. STEPHENS. Mr. Hayes, you say that 50 of these submarines would completely protect us. The evidence given by different navy officers before this committee is contrary to that understanding. The statements made show that submarines are generally speaking an effective defense; they also show that in very rough

water the ordinary submarine is practically helpless, therefore in times of severe storms we could not be adequately protected by submarines alone. We need the full number of submarines you have mentioned, and we also need battleships and fortifications too, in order to thoroughly protect the Pacific coast.

Mr. HAYES. That is all well enough, but my remembrance of the idea of the Navy Department is that 50 was their estimate of the least we ought to have as a matter of defense.

Mr. ROBERTS. You are speaking now of the California coast?

Mr. HAYES. No; I am speaking of the Pacific coast.

Mr. ROBERTS. Do you think that 50 would be sufficient in view of the fact that the Board of Army Engineers said a year ago that Puget Sound could not be protected with shore batteries?

Mr. HAYES. I should think that Puget Sound could be protected by six submarines. I think it could be protected pretty well from attack. I would like to see it get more. I would like to see it get 50. Our people would feel very much easier. I think it is familiar to all of you gentlemen that no way has been found to resist the attack of a submarine except by running away from it, and no battleship fleet would think of going into a harbor or approaching a coast that was defended by a fleet of submarines. They keep away from it, and would stay out in the open to meet the fleet of the enemy there. They would not think of attacking a coast that was protected by submarines. I believe that is the general consensus of opinion of naval experts.

And so it seems to me vastly important not only for us on the Pacific coast, but for the whole country, that this matter should be given more consideration than it has received thus far at the hands of this committee. We are thankful for the things we have received. In 1910 we had four provided for, four submarines, two of which were built on the Pacific coast and are completed there now. The next year two were built and one, I think, since then, and two were recommended last year, which are now building, so that we have received seven altogether since we first appeared before the committee. But we feel that this is grossly inadequate to the needs, and, as I say, we do not expect any battleships to be stationed there at all, and if we had them they would not be adequate protection, and we feel as though we are entitled to this consideration.

Of course if submarines are to be stationed on the Pacific coast they should be built there, because they never have taken any around, and I suppose they never will; but let them be built there and stay there.

Mr. ROBERTS. Conditions have changed somewhat now, Mr. Hayes.

Mr. HAYES. They have, that is true.

Mr. ROBERTS. We have the opening of the Panama Canal practically assured in the next two months, and we are building 26 submarines at the present time.

Mr. HAYES. We have 38 already, built and building, as I remember.

Mr. ROBERTS. Oh, no; we have 52, and 26 building now.

Mr. HAYES. Even after the Panama Canal is finished it will take five or six weeks for one of those submarines to get around through the Panama Canal to the Pacific coast.

Mr. BRITTEN. How long do you think it would take some foreign power to send a couple of hundred men around to California?

Mr. HAYES. It would not take so very long.

Mr. BRITTEN. How many months?

Mr. HAYES. It would not take months; three weeks will do it. It is not so far from Asia to San Francisco as it is from New York to San Francisco by the Panama Canal. I have not got the exact mileage, but I know it is vastly farther from New York than it is from Asia.

Mr. ROBERTS. Mr. Hayes, are you aware that five submarines were recently sent from Guantanamo down to——

Mr. HAYES. No; I did not know that.

Mr. ROBERTS. Of course, that is a comparatively short distance. It is five or six hundred miles. I am not arguing, Mr. Hayes, that we could get submarine transports around to the Pacific coast, contemplating an attack from some foreign power, but I do mean that the submarines that are now building can be sent from the Atlantic coast through the canal to the Pacific coast.

Mr. HAYES. It is possible.

Mr. STEPHENS. Yes; but, Mr. Roberts, would you not consider it a dangerous undertaking to send any number of submarines from the North Atlantic coast around to San Francisco?

Mr. HAYES. No; I do not think it would be seriously dangerous. But the cost of sending them around, I want to suggest to you, will be double or treble what would be the extra cost of building them there, and when they are built there, they are there, and stay there, and that is what we desire.

Mr. TALBOTT. The consumption of coal would amount to more than enough to make up the difference.

Mr. HAYES. It makes two or three times the difference in the cost. It is much cheaper, much more economical to have them built there if they are to be stationed there.

Mr. ROBERTS. They do not use coal.

The CHAIRMAN. They use oil.

Mr. TALBOTT. Well, it is the same thing.

Mr. ESTOPINAL. The primary cost to build them there is greater!

Mr. HAYES. Yes.

Mr. ESTOPINAL. But it would be more than compensated by the cost of transferring them from one coast to the other?

Mr. HAYES. Yes; I feel that this defense we are asking for is not expensive. Twenty-five of these submarines can be built, of the type we are now building, for the cost of one battleship, and it seems to me that we are entitled to that consideration. I believe that the committee, if they consider it and look at it from our point of view, will feel that we are not asking for too much when we are asking for an ultimate submarine flotilla of 50 boats, to be planned and built for use on the Pacific coast. That could be done, as I understand it, for about \$25,000,000; 50 boats of the present type.

Mr. TALBOTT. You would not want that many, because you say 50, and you have 7.

Mr. HAYES. We have 7 now in commission there; yes.

The CHAIRMAN. And 5 building would make 12; that would leave

Mr. ROBERTS. The tendency is toward the smaller and lesser expensive type of boat, that would cost \$200,000 or \$300,000. Those are the figures of the naval experts for submarines that are adequate for coast defense.

Mr. HAYES. That would be, as I understand it, the wider boat, that can steam under its own steam.

Mr. ROBERTS. So your 50 boats would cost somewhat less?

Mr. HAYES. Yes.

Mr. ROBERTS. And they would be just as efficient for coast defense.

Mr. HAYES. Just as efficient; yes, sir.

The CHAIRMAN. The policy of the English Government is to supplant the torpedo boat destroyers with submarines of equal tonnage and radius of action.

Mr. HAYES. They are building now, I think, 74.

The CHAIRMAN. Not so many as that.

Mr. HAYES. They contemplate 200, do they not?

The CHAIRMAN. Not so many. It is overstated in the papers.

Mr. HAYES. France has a large number and they are constantly augmenting them.

The CHAIRMAN. England is building 22 and she has 72 built.

Mr. ROBERTS. Who is that, Mr. Chairman?

The CHAIRMAN. England.

Mr. ROBERTS. What is France building?

The CHAIRMAN. France has 75 built and 18 building.

Mr. ESTOPINAL. How about Germany?

The CHAIRMAN. Germany has 24 built and 12 building. Japan has 13 built and two building. The United States has 25 built and 26 building.

We are much obliged to you, Mr. Hayes.

Mr. HAYES. I present these considerations to you and hope that you will give consideration to our needs, and I know you will.

The CHAIRMAN. Gentlemen, if there is nothing further this morning the committee will stand adjourned.

(Whereupon, the committee adjourned.)

[No. 17.]

COMMITTEE ON NAVAL AFFAIRS,

Tuesday, February 17, 1914.

The committee this day met, Hon. Lemuel P. Padgett (chairman) presiding.

The CHAIRMAN. We will first hear Mr. Humphrey, of Washington.

Mr. HUMPHREY. Mr. Chairman, Mr. Curry, of California, is present, and if it suits the committee I would prefer that you hear him first.

The CHAIRMAN. Very well. You may proceed, Mr. Curry.

STATEMENT OF HON. CHARLES F. CURRY, A MEMBER OF CONGRESS FROM THE STATE OF CALIFORNIA.

Mr. CURRY. I sincerely hope that before the next session of Congress the Committee on Naval Affairs will have the opportunity to visit and thoroughly inspect the Mare Island Navy Yard. Such a visit to the yard I feel confident would convince the committee that the yard is properly located, well equipped with machinery, and efficiently officered and splendidly manned with expert mechanics.

The citizens of Vallejo would like to have you make that trip as their guests. I believe if the committee could visit all of the yards it would greatly assist the Members in preparing legislation, would benefit the yards and the service, and would enable the committee to obtain at first hand that knowledge of the actual conditions and needs of the yards it ought to have to enable it to recommend proper appropriations, efficient policies, and economical administrations.

The location of Mare Island, at the mouth of Napa River, opposite the city of Vallejo, is undoubtedly the very best site on our Pacific coast for a navy yard. It is situated in the best harbor on the Pacific Ocean, just across the bay from San Francisco, the great commercial, financial, manufacturing, and shipping metropolis of the Pacific, and the harbor and railway development being prosecuted on the east side of the bay will add to its strategic value. In time of war it will be safe from attack from outside the Heads, and could only be in jeopardy in the event of a hostile fleet being in possession of the bay. The Government has 1,400 acres of building site with a water front of an ample depth on its operative line for the accommodation of the largest ships, and being inland, is free from the destructive elements found in salt water. The yard is also protected by its location from storms.

The addition of a dreadnaught dry dock and a few minor improvements and rearrangements would make Mare Island the model navy yard in the United States. As it is, she is adequately equipped to build a battleship, and her executive officers and mechanics are

second to none in the world. If given the opportunity Mare Island will build a battleship that will be the pride not only of California, but of the Nation, and she will build it as cheaply as it can be built in any yard in the country.

Mr. BRITTEN. May I interrupt?

Mr. CURRY. Certainly.

Mr. BRITTEN. They have built some vessels at the Mare Island Navy Yard?

Mr. CURRY. Yes, sir; but not a battleship.

Mr. BRITTEN. What is the largest vessel built there?

Mr. CURRY. A collier, about two-thirds the size of a battleship.

The CHAIRMAN. Not two-thirds. The battleships we are now building are more than double the size of a collier. A collier will run something like 12,000 or 13,000 tons.

Mr. CURRY. The dock at Mare Island by being lengthened a little is of ample size at the present time to construct a battleship. Capt. Mayo, now admiral, who, until a year ago, was the commandant at Mare Island, and Capt. Bennett, the present commandant, stated that the dock at Mare Island is of ample size—with the exception of an extension in length, which could be done very cheaply—in which to construct a battleship.

The Mare Island Navy Yard and the New York Navy Yard are the only Government yards at present fully equipped with the men and machinery necessary to construct a battleship. The climate of Mare Island is ideal, and makes it possible for a man to work without discomfort from heat or cold every week in the year. Better work at less cost to the Government is turned out at Mare Island than at any other Government or private shipbuilding yard in the country.

The collier *Vestal*, built at the New York Navy Yard, cost \$60,000 more than her sister ship, *Prometheus*, built at Mare Island. The training ship *Cumberland*, built at the Boston Navy Yard, cost \$10,000 more than the *Intrepid*, built at Mare Island. Two steel targets, built at the Norfolk Navy Yard, cost \$5,000 more than similar targets built at Mare Island, and as a further evidence of the quality and economy of the work done there the repairs on Army transports, revenue cutters, and Fish Commission boats are frequently awarded to the Mare Island Yard.

A little more than a year ago, Capt. (now Admiral) Mayo, the then commandant at Mare Island, ordered the yard inventoried and appraised. In addition to determining the value of the plant to be nearly \$12,000,000, the inventory proved it to be one of the best equipped yards in the country. It would be nothing but common-sense business judgment on the part of the Government to use its navy yards to their capacity before awarding contracts to private yards when the navy yards' bids and estimates are as low as those of private yards, and they usually are. Even though it should continue to be the policy of the Government to award the building of some of its ships to the private yards, navy-yard competition would keep the bids and contracts for construction in private yards down to a minimum that would permit of a reasonable profit, and in the time of war, or threatened war, the Government would not be at the mercy of the private shipbuilding yards.

Mr. KELLEY. It seems to me as though there has been testimony by some of the naval officers that the battleships of the largest class could not get to this navy yard?

Mr. CURRY. The Mare Island Navy Yard?

Mr. KELLEY. Yes, sir.

Mr. CURRY. I will come to that. There is not a ship in the Navy that can not get to the Mare Island Navy Yard on high tide.

Of course, to make navy-yard competition effective at such times it would be necessary for the Government to own and operate an armor-plate plant with an output capacity sufficient to manufacture at least one-half of the armor plate necessary for the Government's use.

Also, the construction and operation of a powder works by the Navy Department would, I believe, be a profitable investment for the Government. If the Government owned its own powder plant, even though it did not manufacture all of the powder used by the Navy, it would be in a position to secure better contracts with private concerns than it does now.

Mr. BATHRICK. The Government now owns a powder plant; are you aware of that?

Mr. CURRY. Yes, sir.

Mr. BATHRICK. You mean one on the Pacific coast?

Mr. CURRY. I do not care where it is located, on the Pacific coast or here; we don't want it located at Mare Island. It is too dangerous. The present powder plant has not capacity sufficient to have a material influence on the supply of powder to the Army and Navy.

Mr. BROWNING. The Secretary of the Navy has recommended that the capacity of the powder plant be increased so that the Government plant can manufacture all the powder?

Mr. CURRY. I think it should be done, and that the Government could manufacture the powder cheaper than it can buy it from private concerns and of as good if not better quality.

I recognize the fact that there is always opposition to the Government doing its own work. This opposition not only comes from some of the business interests affected, but also from others in and out of public life who are conscientiously and on principle opposed to the Government engaging in any business enterprise. Until recently strenuous opposition by the press and people was made to the construction of Government boats in the Government navy yards. The agitation for such construction was started by the people of Vallejo. While they were engaged in persuading Congress to build a portion of the new ships in Government yards in 1900, Admiral Bowles appeared before the Naval Committee of both Houses and gave expert testimony that it would take a year longer and cost \$1,000,000 more to build a battleship in a public than in a private yard. His advice was not taken, however, and he resigned from the Navy. When the experiment of building a battleship at a navy yard resulted from that fight it was found that, notwithstanding the decrease in the estimate of the private yard that constructed the sister ship arising from the knowledge that a similar ship was to be built in a public yard, it took a lot of artificial charges and expert bookkeeping manipulation to prevent the Government-built ship from being the cheaper of the two, while in the matter of speed in construction, the *Connecticut* made the pace for the *Louisiana*, the

former being built at the Brooklyn Navy Yard and the latter at Newport News; and since that time ships have been delivered to the Government within a very much less time from the date of contract than ever before, and the Government ships are built at more reasonable cost in private yards on account of navy-yard competition.

The CHAIRMAN. May I call your attention to a matter there? I asked the Secretary of the Navy to submit to us an itemized statement of the cost of construction of one of each kind of ships recommended, and the statement you will find in the hearings of the Secretary. There were two battleships, eight torpedo-boat destroyers, and three submarines recommended. If they are built under the eight-hour law by contract it is estimated that they will cost \$43,930,652, and if they are built in navy yards it is estimated that they will cost \$50,333,652, or \$6,500,000 more. Those are the cold facts.

Mr. CURRY. May I call your attention to the fact that that is an estimate?

The CHAIRMAN. Yes, sir; I know it is an estimate.

Mr. CURRY. The right way to find out whether they can be built in Government yards as cheaply as in private yards is to let the Government yards submit bids. The last bids submitted by the Mare Island Navy Yard on a ship were on one proposition cheaper and another a little higher than the private yards. Every contract which the Mare Island Navy Yard has received she has gotten in competition with private yards, and every time she has been awarded a bid she has bid under the private yards and under the public yards, and she has always constructed or built the ship or article on which she has bid within the appropriation. There has never been any after proposition of a deficiency. All we want out there is an opportunity to bid. If we do not bid as cheaply as private yards, then give the contract to the private yard.

The CHAIRMAN. As a matter of fact, I can not understand why it is, now that all Government work done in private yards must be under the eight-hour law and that the Government yards are under the eight-hour law, that the outside contract price would be \$43,930,652 and the Government price \$50,333,652, both of them working under the eight-hour law. That is something I can not understand. Of course, I realize that we have holidays and things of that kind, but I can not figure that difference, and yet those are the cold facts that come to us.

Speaking about the Mare Island Navy Yard, I want to call your attention to the fact that several years ago we authorized a collier built at the Mare Island Navy Yard.

Mr. CURRY. Yes, sir.

The CHAIRMAN. And then some duplicate colliers were bought. We purchased the colliers at \$888,000. We fixed the limit of cost at \$1,000,000 for the navy yard at Mare Island, and they reported that they could not build the collier for that amount; and then we raised it to \$1,200,000 and added that the overhead charges should not be included. We had to do that before the Mare Island Navy Yard could build it. The overhead charges were three or four hundred thousand dollars in addition to the \$1,200,000. We purchased a collier by private contract for \$888,000.

Mr. BUTLER. About \$500,000 less?

The CHAIRMAN. Something more than that.

Mr. CURRY. That was before the eight-hour law went into effect on public work in private yards? The overhead charges are more in public than in private yards. A system could be inaugurated by which they might be cut down to some extent.

The CHAIRMAN. Yes, sir.

Mr. STEPHENS. Is it not a fact, Mr. Chairman, that the Mare Island Navy Yard built one Government vessel in recent years, in the last few years, for a little less money than the private yard offered to build it?

The CHAIRMAN. I so understand.

Mr. STEPHENS. And they have built another one for just a little more.

The CHAIRMAN. The Secretary told me the other day that the Mare Island Navy Yard was doing work cheaper than any other navy yard, and that there was no longer an necessity for a differential of 5 or 8 per cent between the cost of construction on the Atlantic and Pacific coasts.

Mr. CURRY. Notwithstanding the fact that the steel had to be taken around the Horn at a considerable expense. Of course, when the Panama Canal is completed, why there will not be so much reason for a differential. As a matter of fact, there is not a differential now.

The CHAIRMAN. The Secretary says that they are building cheaper than on the Atlantic coast now.

Mr. CURRY. I do not want to make any comparisons, but we are building cheaper than on the Atlantic coast, not only in the public yards, but every contract we get at the Mare Island Navy Yard is in competition with private yards.

Mr. TALBOTT. How do you account for that? The wages are the same?

Mr. CURRY. The climate of Mare Island is such that a man can work to his utmost capacity all the year.

Mr. TALBOTT. You think that they really do more work?

Mr. CURRY. Yes, sir; they certainly do more work inside the eight hours on account of the climatic conditions.

Mr. LEE. I would like to ask you a question. Do you remember what the bids were on the supply ship authorized last year between Mare Island and Boston?

Mr. CURRY. No, sir. That is a matter of record which you very likely have before this committee.

The CHAIRMAN. The bid of the Boston yard was lower.

Mr. LEE. Lower than the bid of the Mare Island yard?

The CHAIRMAN. Yes, sir. The bid of the Philadelphia yard was cheaper on one ship and the Boston yard on the other.

Mr. LEE. We do some work on the Atlantic coast pretty cheap.

The CHAIRMAN. There is this matter. Of course you understand that an estimate submitted by a navy yard is not a bid, it is simply an estimate; and if they do not do it within their estimate there is no recourse or obligation on them; we just have to appropriate more money.

Mr. CURRY. The estimate has to be lower than the bid or they do not get it, and Mare Island never asks for a deficiency.

The CHAIRMAN. Yes, sir; but after they get it, it is a question whether they can carry out their estimated figure.

Mr. STEPHENS. Have we had to add anything to the estimated cost at the Mare Island Yard?

The CHAIRMAN. I understand not.

Mr. STEPHENS. They had to do that in the case of some of the eastern yards.

The CHAIRMAN. Before they commenced work on it they submitted an estimate which put it above the limit of cost, and we had to increase the limit of cost to meet their estimate.

Mr. LEE. I simply wanted to say to Mr. Curry that the Boston papers are contending about Boston not getting the supply ship to build, and I was wondering what the difference was between the yards.

Mr. CURRY. I understand that under that bid the Mare Island Navy Yard got one ship.

The CHAIRMAN. Not yet. The Secretary is considering the matter. The bid has not been awarded.

Mr. LEE. That is the reason I asked the question.

Mr. CURRY. Some objection has been made to Mare Island on account of the shallowness of the channel. That objection is untenable. When the yard was located the channel was of adequate depth. The *Independence* was sent to the yard about 50 years ago; she drew 31 feet of water and went in on low tide. Since that time the débris from hydraulic mining, from which there is no more trouble, as hydraulic mining was stopped by law years ago; and the erosion caused by cultivating the virgin soil did shallow the channel; but the work being done on the channel by Army engineers, and the Navy Department is deepening the channel, and there is no doubt but that any reasonable depth required can and will be made and maintained.

At the present time the channel is more than deep enough to permit of the construction and launching of a duplicate of the largest battleship afloat. I have had the channel question up with the Army and Navy Departments several times since I came to Washington. At a recent interview with the Army engineers I was assured that the work of deepening and maintaining the channel would be vigorously prosecuted by the Government; that commercial necessity would demand and justify it even if the navy yard had not been located there. That the work already done on the channel has been effective is evidenced by the fact that on the 27th of March of last year the *California*, drawing 27 feet of water, was launched after being overhauled, and left the yard without any difficulty whatever.

In my opinion the proposed Government dry dock ought to be located at Mare Island. Only in case of being badly damaged in battle or collision will a battleship ever draw as much as 40 feet of water, and in that condition it would be hard to get her into any stationary dock wheresoever located.

Mr. LEE. You think that the dry dock should be located at the navy yard instead?

Mr. CURRY. We have no objection to the Government entering into this contract, but if the Government were to locate the dry dock to-morrow it certainly should be located at the Mare Island Navy Yard.

Mr. LEE. At the navy yard?

Mr. CURRY. At the navy yard, and I will give you the reason later. We have no objection to the Government entering into a contract for temporary use, but we think if the dry dock were to be located tomorrow it should be at the navy yard.

Mr. LEE. I think so myself.

Mr. CURRY. I will give you my reason in a little while; just as soon as I have completed the statement I was making when Mr. Lee started to question me.

And if a battleship were wounded in a battle outside of the Golden Gate it would be quite an undertaking to bring her over the bar at low tide if she drew 40 feet. In that case she could only be brought over the bar by being pontooned, or else she would have to wait for high tide.

Mr. Howard Holmes's report, estimate, and plans, made to the citizens' executive committee of the city of Vallejo, show conclusively, in my opinion, that Mare Island now has available sites and in some places adequate depth of water to justify the Government in constructing a dreadnaught graving dock at the yard, and the telegram I received from Capt. Bennett, the commandant, should set at rest any controversy regarding the depth of water in the channel and in front of the yard proper.

Mr. Holmes's report and the commandant, Capt. Bennett's telegram were at my request made a part of the hearings before the committee by Mr. Stephens, one of its members. They are to be found on pages 255, 256, and 257 of the hearings.

Other strong arguments in favor of locating the dock at Mare Island are the facts that the Government owns and would not have to purchase the site; that the location of the dock at the yard where there is already a plant and an organization second to none in the country would insure efficient and economical management; that the water in the channel is practically fresh; and that the geological formation is perfect for a dry-dock foundation.

The Navy Department recently let a contract for the dredging of Mare Island Channel so as to make the channel 600 feet wide and at least 30 feet deep, for the removal of the obstruction known as Commission Rock, and for the construction of a 1,000-foot turning basin. This work will be completed within a year and a half, and is proving to be effective and entirely satisfactory so far as prosecuted, and shows evidences that after the channel has been dredged to a depth of 30 feet it will, by scouring, produce a channel at least 35 feet deep, and should in the future a 40-foot channel be required it can be easily and cheaply dredged to that depth. On the point of the island we have now over 40 feet.

Senator Perkins has introduced a bill appropriating \$3,000,000 for the construction of a dry dock on San Francisco Bay or some of its tributaries.

It is known that the Government intends to build a dry dock somewhere around San Francisco Bay, and very naturally the citizens of Vallejo and the officers and employees of Mare Island are or have been in a somewhat anxious state of uncertainty regarding the place the Government will locate the dock. Their anxiety has, however, recently been somewhat relieved, as Secretary of the Navy Daniels has stated to me again and again that Mare Island is the proper place to locate the dock and that it will ultimately be located

there, provided the work being done and to be done on the channel proves adequate and makes a channel of sufficient depth that can be maintained at a reasonable cost. Consequently I shall not interpose, and the citizens' executive committee of Vallejo has decided that it is not necessary for it to interpose any objection to the summation of the project of the Government entering into a 6-year contract for at least \$50,000 worth of dry-dock work a year with the Schwab people for dry-dock work at Hunter's Point, as the committee and I have implicit confidence in the good faith of Secretary of the Navy Daniels in declaring that the lease will not mitigate against Mare Island being ultimately chosen as the site for the new dreadnaught dry dock in case the dredging operations now in progress prove successful.

I wish at this point to introduce and make part of these hearings a letter I have received from Mr. J. A. McGregor, president of the Union Iron Works Co.

I do not know whether a copy of that letter has been filed with the committee. If it has I will not read it.

MR. BRITTEN. Does that apply to the dry dock?

MR. CURRY. Yes, sir.

MR. BRITTEN. The \$50,000 proposition?

MR. CURRY. Yes, sir.

MR. BRITTEN. We have gone into that very thoroughly.

MR. CURRY. Then, with the consent of the committee, I will put that letter in the hearings.

The CHAIRMAN. Certainly.

(The letter referred to by Mr. Curry follows:)

SAN FRANCISCO, January 13, 1914.

HON. CHARLES F. CURRY,

Member House of Representatives, Washington, D. C.

MY DEAR MR CURRY: You are familiar, in a general way at least, with the proposition I made to the Secretary of the Navy, on behalf of this company, involving the construction by us of a new graving dock of the largest size on our Hunters Point property, capable, in fact, of drydocking any vessel that could possibly pass through the Panama Canal. The estimated cost of this dry dock is approximately \$2,000,000.

The substance of our proposition is that in view of our undertaking to build such a dry dock, and according to the Navy Department not only its use but also the use of the two graving docks now located at Hunters Point (and which the proposed new one will adjoin), the Government will enter into a contract to give us dry-dockage business at a specified rate, which is considerably below the prevailing commercial rates, in an aggregate amount of not less than \$50,000 annually for six years from the time the proposed dock is completed and ready for service, or in the event that the dry-dockage business in any one year shall fall short of the sum of \$50,000, the Government will pay us the difference in cash. You will note that this annual sum of \$50,000 is equivalent to about one-half the annual interest on the estimated cost of the dock.

I have been unofficially informed that the Government estimates that their dry-dockages would exceed the sum of \$50,000 annually, in which case it is at no expense whatever in connection with the building of the dry dock nor in its maintenance, their only outlay being represented by our charge at the specified rate for the use of the dock when and as used.

At the request of the Secretary of the Navy and in order that the Government might be amply protected while at the same time enjoying the full use of the dry docks, we agreed that the Navy Department should be permitted to use its own employees, equipment, and facilities wherever possible on any repairs to vessels while in dry dock, and, further, we agreed to a schedule of charges at specified rates for any labor or materials that might be required of us.

The present dry docks at Hunters Point are more than sufficient in size and number to take care of the ordinary commercial business of the port at present and for some time to come, but looking ahead to the future it would seem possible that the growth of shipping facilities here would require additional dry-docking facilities.

Naturally, however, we would not consider undertaking the building of a new dry dock until the need were pressing and the investment of money for this purpose could be expected to yield a reasonable return. There is no disguising the fact that dry-docking facilities for naval vessels on this coast, particularly battleships of the later type and size, are woefully inadequate, but for the Government to provide for this lack, involving congressional action, the securing of proper sites for additional naval bases and the building up of the necessary equipment must take years of time.

This company is not particularly interested in the question of the location of naval bases, but it occurred to me that through the temporary proposition made to the Navy Department we could be of material assistance to the Government, and its acceptance of a contract of the proposed nature would encourage us to undertake the construction of a large dry dock at that time, i. e., considerably ahead of the time it would be needed for commercial purposes.

There is no doubt whatever as to the advantage the Government would derive by entering into the proposed contract with us, and this is the feeling of the various Government departments concerned.

I have not been following the matter actively, relying very largely upon the attractiveness of the proposition to the Government to justify its acceptance, and no better evidence of this should be needed than the fact that both Mr. Daniels, the present Secretary of the Navy, and Mr. Meyer, his predecessor in office, after a thorough investigation, formally recommended it to Congress for favorable action.

The present status of the matter, I am advised, is that Mr. Secretary Daniels has passed our proposition along to Congress with recommendation for favorable action, and that he be authorized to enter into the necessary contract with us.

I feel sure that the proposition must commend itself to your favorable consideration, and I trust it may have your hearty support.

Yours, very truly,

JOHN A. MCGREGOR, *President.*

I wish to call the attention of the committee to the fact that, while not actually saying so, the statement of Admiral Watts, Chief of the Bureau of Construction and Repair, before the committee, seems to give the impression that the dock facilities at the Boston yard are much more satisfactory than at Mare Island, when in fact whatever difference exists in point of capacity is in favor of the Mare Island dock, both docks, and also that at the Philadelphia yard, having been authorized at the same time and differing in capacity only in the slightest degree. This can be verified at the office of the Bureau of Yards and Docks.

On page 235 he states that when the canal has been opened there is a probability of our principal fleet having periods of duty on the Pacific coast, and that in consequence of lack of water and the inferior size of the dock at Mare Island 10 of the battleships will have to be sent to Puget Sound or be dependent upon the new dock at Hunters Point, while on page 244 he informs the committee that the *North Dakota*, *Florida*, and *Utah* have been docked successfully at Boston, failing to advise the committee at the same time that the Mare Island dock is a trifle larger than the one at Boston. As a matter of fact, there is not a ship carried on the roster of the Navy Department that draws more than 28 feet 6 inches but the *Pennsylvania*, and she draws only 4 inches more than the ships that were docked at Boston without trouble, according to Admiral Watts's statement.

The statement regarding draft of ships now in commission can be verified by the report of the Chief of the Bureau of Construction and Repair for 1913.

He also fails to state that in any event a portion of the ships would be allotted to the Puget Sound yard for docking and such repairs as were necessary, and there is absolutely no reason why any ship that could not get into the Mare Island dock could not with perfect propriety be among those sent there. At present one-half the cruisers doing duty on the Pacific coast have the Puget Sound yard designated as their home port, and unless the big dock up there was built for the fun of it, it is fair to presume that the practice will continue when the battleships visit the Pacific and one-half of them be docked and repaired at that station. It is very likely that before a battleship comes through the canal the dredging of Mare Island Channel will be advanced sufficiently to permit any ship in the Navy to reach the yard without difficulty or danger, and both objections of the admiral regarding lack of water and lack of docking facilities will be a tale that was told.

It is remarkable how some people dwell upon the necessity of having such depth of water in which to float a ship when the Mare Island yard is the objective point of the cruise, while you scarcely ever hear of such objections concerning any other yard.

Right here I wish to state that there has been less money spent on dredging at the Mare Island Navy Yard than in any of the eastern yards, except two. They are now trying to get a 30-foot channel made at the expense of a great many millions of dollars at one eastern yard and they are spending many millions more to try to deepen the channel to another yard to 35 feet, while we can have 35 feet without the expenditure of so much money.

It has been iterated and reiterated that no battleship has ever been able to get to the Mare Island yard, and Admiral Watts repeats it in regard to the visit of the fleet in 1903. Well, the *Missouri* draws practically as much water as any of the ships that composed that fleet and was among those that could not get to the yard until something happened to her cylinder and it was compulsory that she go to the yard for repairs, and then she got to Mare Island without a particle of trouble, was repaired, and got away just as easily. Of course, at the time of the visit of the fleet (1908) the new dock was incomplete, not being ready to receive a ship until two years later, and the old dock was admittedly too small for ships of that size, which was the real reason the ships of the fleet did not go there for docking. No difficulty is now experienced in docking ships at Mare Island at high tide and no attempt is made to dock a ship of any size there except at high water.

Mr. STEPHENS. The *Missouri* was a part of the fleet?

Mr. CURRY. Not at the time of the visit of the fleet, but afterwards. She had something happen to her cylinder and she came into the bay, was taken to Mare Island, docked, repaired, and left the yard easily and without difficulty.

Mr. STEPHENS. And afterwards went there?

Mr. CURRY. Yes, sir. The only thing the commander had to do was to wait for the high tide to put her in the dock.

Mr. STEPHENS. There was no trouble?

Mr. CURRY. No, sir.

Mr. WILLIAMS. Why was that representation made that way; what was the reason?

Mr. CURRY. I do not think it was an attempt at any deception. I do not think it was a misstatement, but Admiral Watts did not tell it all. The fact is that the *Missouri* did injure her cylinder and she went to the Mare Island Yard and she got off the ways and she went down to the sea.

Mr. LEE. Without any trouble?

Mr. CURRY. Yes, sir.

Mr. LEE. Showing that the experts did not know what they were talking about.

Mr. CURRY. You had an expert come before this committee in 1900 and before the Senate committee and say that you could not build a ship in a public yard within a year longer and at a cost of \$1,000,000 more than at a private yard, and you tried it and found that the experts estimate both as to time and money was simply an error of judgment, not a deliberate misstatement.

Mr. BUCHANAN. What is the difference between high and low water?

Mr. CURRY. Six feet.

Concerning the statement on page 236 that complaints were frequently made that cruisers grounded at the quay wall while at Mare Island at low water, if you would inspect the makeshift that is made to do duty as a dredger at very high cost in comparison with results achieved, you would be surprised that there were not more complaints. If the State harbor commissioners at San Francisco used such a tool every vessel using the water front of San Francisco would be on the mud at low water.

In giving his estimate as to the cost of docking ships at Hunters Point under the terms of the lease, he states that the 21 battleships now comprising the Atlantic Fleet would cost, assuming that each one occupied the dock 48 hours, in round numbers, \$48,000 each time they were docked there, evidently overlooking the fact that at no time would more than half the fleet be docked there, the remainder going to Puget Sound, as is the practice now.

During the past year, 75 vessels were docked at the Mare Island yard of varying sizes, of course, and at both docks, for a total cost of about \$28,000, so you will see that the \$50,000 will net a good big profit annually to the Union Iron Works. I don't object to that. The company ought to, and so far as I am concerned I shall be glad to have it, make a good profit out of the contract. I simply call attention to the fact to show that the Union Iron Works is not doing the Government as big a favor by entering into the contract as the Government is doing that corporation.

Mr. LEE. The Secretary of the Navy has been talking about building an armor plant, because he thinks there is a combine or trust. Do you think it would be well for the Government to enter into a partnership with a private firm for the construction of a dry dock when they have a piece of property at a navy yard where they could put the dock?

Mr. CURRY. Of course, in my opinion as a layman, I am confident that the Government would be justified in locating the dock at the Mare Island Navy Yard now.

Mr. LEE. At the navy yard?

Mr. CURRY. At the navy yard; but the Secretary of the Navy is responsible to the people of the United States. He has some advisers who tell him that it is not advisable. I have absolute confidence in his integrity and his patriotism and in his desire to do what is right, and that he wants to do the best thing for the people and to use their money to the best advantage. The proposition of making a contract with the Union Iron Works I have no objection to. It would give the Secretary of the Navy an opportunity to investigate personally or through people in whom he has confidence the situation at the yard, and it would give the gentlemen who are members of this committee an opportunity of going out to California and visiting the Mare Island Navy Yard and making any examination that you think you ought to make, and you will then be able to come back here, and at the next session or at the following session of Congress act intelligently on the proposition and with full knowledge of what you are doing. Of course, I can give you the advice now to go ahead and put it there. I believe that is right. But if the Secretary of the Navy wishes to enter into this contract we do not object to him doing so, and no particular harm will come by the postponement of locating the dock until he has had an opportunity to convince himself that the work which is being done on the channel has been effective, and the channel is of adequate depth.

Mr. TALBOTT. The Government would have this advantage: If we determined to build a dry dock at the Mare Island Navy Yard in case of an emergency we would have two dry docks to use, the one at Hunters Point and the one at the Mare Island Navy Yard?

Mr. CURRY. Yes, sir. You have one at the Mare Island Navy Yard now which can be used for any ordinary ship. I have absolute confidence in the Secretary of the Navy, and I admire his policy and I admire the man. I know he will not locate the Government dock anywhere at present, or until after thorough investigation. We feel confident the dock will ultimately be located at Mare Island.

Mr. BRITTEN. How far is Hunters Point, the location of the proposed dry dock of the Union Iron Works, from the Mare Island Navy Yard?

Mr. CURRY. About 25 or 30 miles.

Mr. BRITTEN. Would it not cost a lot of additional money in time and in the removal of materials back and forth from the navy yard to repair any of our ships?

Mr. CURRY. Yes, sir. I do not think the Navy would take much labor there. I think the Union Iron Works Co. would do most of the work.

Mr. BRITTEN. Of course, if this is a movement to give the Union Iron Works not only the \$50,000 for dockage, but also the work on the vessels to be repaired, then it is a different proposition.

Mr. CURRY. I do not think they will do much more than \$50,000 of work a year. I believe if they are going to do more than \$50,000 of work a year the Government will do most of the excess at Puget Sound.

Mr. KELLEY. Did you notice the Secretary's testimony on page 674 as to the depth of the channel?

Mr. CURRY. No, sir.

Mr. KELLEY. He says, speaking of the contract which you have just been talking about:

We would save money by it; and besides, while we have small dry docks at Mare Island, the depth of water up to Mare Island now will not permit our largest ships to go to that yard.

Mr. CURRY. Any ship afloat in our Navy, with the exception of the *Pennsylvania*, can go to Mare Island Navy Yard at high tide, and even the *Pennsylvania* could reach the yard in case of necessity. The telegram I received from Capt. Bennett with reference to the depth of the channel I have filed here as a part of the record by Mr. Stephens, and he said that the depth of the channel at that time was 24 feet at low tide, and that means 24 feet at the highest point at low tide anywhere in the channel. The Government has let a contract to dredge that channel to at least 30 feet at low tide. The channel is now 30 feet at high tide. The *Missouri* was docked and repaired at Mare Island. The Mare Island dock is about the same size as the Philadelphia dock, a little larger than the one at Boston. The measurements are on record in the department.

I also wish to call attention to the fact that in Mr. Holmes's estimate for building the dock he recommended for the southern extremity of the Mare Island yard is but \$1,750,000, including the very expensive system of pile foundation laid down in his plan, and which Admiral Watts, on page 251, introduced a statement by the Chief of the Bureau of Yards and Docks to show, would not be necessary in building a dock at Hunters Point, yet they claim that the cheaper conditions prevailing at Hunters Point would nevertheless involve an increase of a quarter of a million dollars in the expense of construction. Mr. Holmes states that he has purposely made his estimate upon a most liberal basis and is satisfied the dock planned by him for Mare Island could be built for a very material decrease from his calculation.

I do not know any reason why building a dock at Hunters Point should cost more than building a dock at Mare Island. I am satisfied that an investigation would show that it could be built for an amount not to exceed \$1,250,000.

Mr. Howard Holmes is one of the best engineers and experts that we have in the State of California for this class of work. For a great many years he was the chief engineer of the State Harbor Commission of California at San Francisco. At the present time he is employed by the Hunters Point people, by the Schwab people, at a large salary, and when the people of Vallejo wanted to secure his services to make this investigation and report for them of available sites for a dreadnaught dry dock at Mare Island, he asked the president of the Union Iron Works for permission to do the work for the city of Vallejo before he would accept the contract, and he told him to go ahead and do it.

There appears to be extreme reluctance on the part of those to a continuance of Mare Island as a first-class yard to entertain the idea of using high-water terms in discussing the water depths at that yard, but it is a fact that when the fleet entered San Francisco Harbor the admiral in command of the fleet did not think it incompatible with his dignity or with the proper discharge of his duties to wait for high water before crossing the bar, and it certainly would

not seriously inconvenience the commander of a ship to wait for high water on which to dock at Mare Island. When the dredging work being done and to be done on the channel shall have been completed the deepest-draft ships in our Navy can be taken to the yard and docked at low water.

I imagine that the real objection of a number of naval officers to Mare Island may be more on account of its location than the depth of water in its channel.

The yard is not situated close enough to the clubs and social life of San Francisco to suit them. That is all there is to it.

I am authorized by the citizens of Vallejo to invite you gentlemen to come out there as their guests. We would like to have you come out there and bring some expert in whom you have confidence and examine the geological formation of the island and its location from the strategic standpoint and to see whether the machinery is adequate, to compare our mechanics with any mechanics anywhere in the world, and to take some person along with you to absolutely measure the depth of the channel and to satisfy yourselves.

Mr. WILLIAMS. You really think it is necessary that the committee should go there?

Mr. CURRY. I do; yes, sir.

Mr. ESTOPINAL. The extreme depth of water at low tide is now 24 feet?

Mr. CURRY. The shallowest depth of water at low tide is nowhere less than 24 feet.

Mr. ESTOPINAL. At low water?

Mr. CURRY. Yes, sir.

Mr. ESTOPINAL. And there is a 6-foot rise?

Mr. CURRY. Yes, sir.

Mr. ESTOPINAL. And you propose to dredge 5 feet more?

Mr. CURRY. Six feet more; yes, sir.

Mr. ESTOPINAL. So at high water you would have 36 feet of water?

Mr. CURRY. Yes, sir; and after it is dredged to that depth it will probably scour out possibly 4 or 5 feet more.

Mr. LEE. Mr. Chairman, I would suggest that the committee accept Mr. Curry's invitation to visit that navy yard.

The CHAIRMAN. I think it would be well to express to Mr. Curry, and through him to the people of Vallejo, our deep appreciation of their courtesy and kindness, and to say that if opportunity offers we will be glad to come.

Mr. CURRY. I wish to thank you, Mr. Chairman and gentlemen of the committee, for the courtesy extended to me.

STATEMENT OF HON. WILLIAM E. HUMPHREY, A MEMBER OF CONGRESS FROM THE STATE OF WASHINGTON.

Mr. HUMPHREY. Mr. Chairman and gentlemen of the committee, I first want to ask this question for information. As I understand it, the committee has no intention of making a recommendation for the location of a dock on the Pacific coast at this time?

The CHAIRMAN. Not that I know of.

Mr. HUMPHREY. Then I will not address myself to that point.

Mr. Chairman, there is a matter which I wish to mention for a moment, and that is in regard to the cost of construction on the At-

atlantic and Pacific coasts. I read the statement that the chairman referred to a while ago made by the Secretary of the Navy. I think the Secretary of the Navy unwittingly did the Pacific coast people an injustice in making the statement that they could construct ships on the Pacific coast as cheaply as they can on the Atlantic coast. If the Secretary of the Navy had stated that they were constructing ships as cheaply on the Pacific coast as they are on the Atlantic coast he would have stated the fact.

The CHAIRMAN. That is what I understood him to state.

Mr. HUMPHREY. He said they could.

The CHAIRMAN. His statement to me was that they were.

Mr. HUMPHREY. That is right, but the fact about it is that the Pacific coast yards have been running on a narrower margin than the Atlantic coast yards were willing to do. It is not necessary for me to stand here and argue to this committee that it costs more to deliver the steel on the Pacific when you construct the ships, neither is it necessary for me to stand here and argue to you that inspection costs more than at a navy yard in the East because they charge up the naval officer's expenses during the time he is gone. The difference in wages is made up to a large extent by the difference of climate that Mr. Curry spoke of.

Some of you gentlemen who have been on this committee for many years may remember that when the question in regard to the construction of the *Nebraska* was under consideration that Mr. Robert Moran, who was then the head of the yard which constructed that great vessel, publicly made the statement that he could overcome the difference in wages on account of the difference in climate, that he considered that the one would offset the other, but that he could not overcome the additional difference in the cost of the freight. I want to say that much in justice to the yards on the Pacific coast and in justice to the private builders.

Only a few days ago estimates were submitted for the construction of some naval vessel—I do not now recall the name, but it was a small vessel—and the Boston yard was the lowest bidder and the Philadelphia yard was second, as I recall, the Puget Sound yard was third, and Mare Island yard was the fourth.

Mr. CURRY. I stated that.

Mr. HUMPHREY. I simply want to call attention to the fact that while we have been bidding low it is because they were willing to take the work for less than the eastern yards.

Mr. BUCHANAN. Is there any difference in the method of management out there?

Mr. HUMPHREY. I would not be competent to state as to that; I do not know anything about it. I suppose that the management is practically the same.

I want to call your attention to another matter which the Chairman mentioned. You must remember this—and I say this, having a yard in my district—that where a yard submits an estimate, it is only an estimate, and if they do not build the vessel inside of that estimate, why, Congress appropriates more money, but an outside private shipbuilder who bids has to come up and build the ship for what he bids; he has to furnish a bond and he is responsible. The yards simply submit estimates. I believe in building a sufficient number of vessels in the yards to hold down the private bidder.

so that they can not combine and run up the price on the Government. Further than that, I am not very much of an advocate of ship construction in any Government yards.

Mr. CURRY. The Mare Island Navy Yard never came back for any more money?

Mr. TALBOTT. Except for one collier.

Mr. HUMPHREY. My recollection is that on the collier they did not, although I may be wrong.

What I came before the committee to talk about, Mr. Chairman—I know it will surprise you—is submarines.

Mr. BRITTEN. We have not heard much about submarines.

Mr. HUMPHREY. It is not necessary for me to go over the argument that I have made very many times before this committee in regard to the Pacific coast, and particularly the North Pacific, and point out to you the conditions there that make it absolutely impossible to protect it in any way except by submarines or torpedo boats, you know that, and I come here every year and call your attention to the fact. We have nothing on the Pacific coast to-day, and never have had, except battleships, one time, as they passed by.

Mr. BUTLER. I believe your remarks in that direction have made some impression on this committee.

Mr. HUMPHREY. To-day the combined fleet on the Pacific coast, if you had them all in one bunch, could not stand up for 20 minutes before one modern battleship. We come in and get nice promises of what is going to happen, and we vote for your bill and expect to—I am always glad to support the committee—but the fact remains that the Pacific coast so far as protection is concerned, might just as well be off the map.

Now, Mr. Chairman, I know we are told that the opening of the Panama Canal is going to change conditions, and that if we just wait until the Panama Canal is finished everything will be all right. As one of those who are trying to study the effect of the Panama Canal, I do not believe anything of the kind. I think the Pacific coast people are going to discover, after the Panama Canal is built, that the fleet will not stay on the Pacific any more than now, and, if you have your fleet on this side—and it will be kept here—the excuse will be, "You now have the Panama Canal, and it is not necessary to keep the fleet there." You start the fleet from Boston, or New York, or anywhere else on this side, and a fleet can cross the Atlantic from Yokohama and be over there two weeks before we can get around there. You can have your fleet, perhaps, down in the Caribbean Sea, and a fleet can start from Japan and beat your fleet into Puget Sound by several days.

Mr. WILLIAMS. Is that on account of the distance?

Mr. HUMPHREY. Yes, sir.

Mr. WILLIAMS. What is the distance from Panama to Puget Sound, and what is the distance from Japan to Puget Sound?

Mr. HUMPHREY. The distance from Panama to Puget Sound is about 50 miles farther than it is from Yokohama. I know you have an idea, when you look at the map, that Panama is right down near Puget Sound, but that is not the fact. If you had your battleship fleet through the Panama Canal and ready to start you would be on an exact equality so far as distance is concerned.

It is almost the same distance from Panama to Seattle as it is from Seattle to Yokohama, almost the same distance to a mile. So you see, after you get the Panama Canal constructed and opened, you are at no advantage so far as that part of it is concerned.

Mr. BUTLER. Would not a fleet kept at Panama be of some advantage to the Pacific coast in the matter of defense?

Mr. HUMPHREY. Oh, yes; if a fleet was kept down in that part of the country it would be of advantage, because then it would be a question of who got started first. If our fleet should get 24 hours' start they could reach Puget Sound first, if they were of the same speed.

Mr. BUTLER. How about the defense at Hawaii?

Mr. HUMPHREY. I want to talk about that just a moment. I do not know anything about a navy in the way of technical knowledge or how it should or should not be used, but it does seem to me the most absurd proposition that I have ever heard urged that Hawaii protects the Pacific coast. I can not understand why, if a fleet were to attack the Pacific coast, it should go wandering down to Hawaii. I will give you an illustration of what I mean:

I remember one time many years ago, when I was a young fellow, I went down into South Carolina. I became acquainted with a most delightful old gentleman down there and went out to spend a week with him hunting. As we went out into the country somewhere near Charleston he showed me what was left of an old embankment or breastwork, built there during the war.

One end of that breastwork rested on the Atlantic Ocean and the other ran back to impenetrable swamp. The old gentleman pointed out to me that work with a great deal of pride, and that pride was well founded, because it was a wonderful piece of work. He described to me that they had that there when Sherman was going through the country, and told how they got in behind this breastwork; and he pointed out to me that that breastwork could never have been taken in the world. He said, "We were there and we were ready, and it was not possible for Sherman or any other man to take that breastwork." He stopped there, and I was very anxious to know how the thing terminated. Finally I said to him, "How did the fight come out?" He said, "We didn't have any fight. He just went on by and left us."

Mr. BUTLER. Perhaps they were not near enough?

Mr. HUMPHREY. Why should a fleet that wanted to go into the Puget Sound go down around Hawaii? Suppose you have an impregnable fort down there, why in the name of common sense should a fleet go 1,500 miles out of its way looking to find somebody to fight when they come on up to Puget Sound, where there is nothing to interfere with them?

The CHAIRMAN. Just at that point, where would Japan have a base of operations when she came across?

Mr. HUMPHREY. She could come over to Bremerton and make a base there. That is a very satisfactory place.

Mr. BUTLER. And bring everything with her that she needed?

Mr. HUMPHREY. Why not?

Mr. BUTLER. I do not know why not. I can not answer that question.

Mr. HUMPHREY. I do not see why she should consult us, because she can come in, if she wants a base, to Bellingham, with wharves, a town of 26,000; she can come in there without going within 15 miles of any gun we have, and as there are no submarines, there is nothing to disturb her except a rowboat, and when she gets to Bellingham she will have control of the Northern Pacific and the Great Northern Railroad, and penetrate as fertile a country as there is in the world. I do not know why she would not be able to do it.

Mr. BUTLER. I am not a military man and do not know much about such things, but I would like to talk to you about it, though I am not going to take the time of the committee now. I question the position we are taking with reference to Honolulu as actually commanding the Pacific.

Mr. HUMPHREY. That is true. I do not know anything about it, but it does not appeal to my common sense. However, it is one of those things you can not tell about. Until the time Grant left and went down below Vicksburg, all the military authorities in the world said that would be an insane thing to do, but he found he could not go in one way, he went in another.

Mr. WILLIAMS. Suppose they did get in there, as you say, there is no country to draw on, no hostile country; how will they obtain their supplies?

Mr. HUMPHREY. If we remain in the condition we are in now, they could run in a second-class cruiser, if they desired to capture any of those cities—of course, in modern warfare I do not suppose they would, for we know enough to get the gold out of the assay office and get it away from there.

I am not criticizing this committee on this proposition. I want that distinctly understood. But I am criticizing the Secretary of the Navy—not this one, because he has not had time to act yet. Mr. Hayes came with me before this committee, and we urged upon this committee the necessity of additional protection in the way of submarines and torpedo boats. You will remember you increased the number from four to eight. In your bill was incorporated the suggestion that was intended for the Secretary to understand how the matter stood. What was the result? Although you added four, notwithstanding the promises that were made, when it came to build those submarines, they built six of them on this eastern coast, and two of them were let on the Pacific, and they were given to some company at San Diego, and the last account I had of them was that they had failed in the contract and were not able to carry it out.

Mr. STEPHENS. The failure was due to an eastern firm, or else they would have been constructed there. There is no fault to be found out there.

Mr. HUMPHREY. I was told by the Navy Department there was some failure somewhere.

Mr. STEPHENS. It was a failure in the East.

Mr. HUMPHREY. In any event, it was the understanding of this committee that half of them should be constructed on the Pacific coast, and we only had two, and we have had trouble about having those constructed. I can not present the conditions any more strongly than they are, but I just want once more to urge upon you this proposition. We on the Pacific coast, certainly you will admit when you consider it, according to the statements made the other day by

the Assistant Secretary of the Navy, have some eighteen hundred miles of unprotected coast. I do not think we are asking for anything unreasonable. You keep your battleship fleet around on the Atlantic at a cost \$150,000,000. Why can not you give us \$15,000,000 or \$20,000,000 for these submarines? Suppose all this trouble exists wholly in the minds of men. The man who believes he is going to be attacked is as uncomfortable as if there really were danger. Why can not this committee indicate in some way that the Pacific coast shall have a reasonable amount of protection? That is what we are asking for.

Mr. BUTLER. I always understood, after the completion of the Panama Canal the fleet would be divided, and a portion of it kept on each coast. That has always been the understanding.

Mr. TALBOTT. I think Mr. Humphrey is right about it. We did make that increase of four with the idea they should go on that coast.

Mr. HUMPHREY. Yes; and so expressed it in the bill.

Mr. TALBOTT. I know that is right. That is what moved me about it.

Mr. HUMPHREY. I felt very well pleased over it, and we felt at last the committee had given us some recognition and something would be done. The situation is such there on Puget Sound—and I speak of that because I live there; the gentlemen of California can take care of themselves, although I want California taken care of just as well as my portion of the country—but the condition is such on Puget Sound that if this committee would see to it that we had a fleet of 8 or 10 submarines we would be comparatively secure. The situation is such that they can protect that whole country, because in that deep water, in those narrow coves, there are such places for concealment that no battleship would attempt to come in there if they knew they were there.

Mr. BUTLER. You can not mine Puget Sound, according to my recollection?

Mr. HUMPHREY. No. A great portion of the time there is so much smoke and fog you can not see. But it is ideal for submarines and torpedo boats. That is what makes it a little hard for us, because if we were asking for a fleet of battleships out there, there would be some reason to reply that the cost is too great, but when we come here and ask for reasonable protection, for a small amount of money, it seems to me it ought to be given us, and I think this committee will put something in the bill this time that will show their feeling upon it. If the committee does that, I do not believe the present Secretary will do like the former one did.

I want this committee to do something to give us reasonable protection. The people of Puget Sound and the Northwest and on the whole Pacific coast have a right, whether this danger is real or imaginary, to feel they are protected.

Mr. LEE. Mr. Chairman, I would like to take the time of the committee for a few minutes to explain my contentions as to the proposed dry dock that was to be located on the Schmoele tract, and to say that the department had maps and charts showing the borings on that tract, and on January 13 I called the department, Admiral Stanford, Chief of the Bureau of Yards and Docks, and asked him to give me the borings of the Schmoele tract, so that this committee could see just what the stratum was at that particular

point. I was unable to secure the borings. I then appealed to the chairman of the Naval Committee and had him try to get them, I think about January 29. I was anxious to get the borings for the purpose of showing the committee that my contention was right so far as a bottom was concerned on the Schmoele tract. After a fight of practically 35 days I succeeded in getting the borings yesterday afternoon after the hearings of the committee were sent to the printer.

The map shows these borings were made on August 12, 1913. I wish to call the attention of the committee to the borings on the Schmoele tract, where the Secretary of the Navy and Capt. Winterhalter stated they thought they would locate the dry dock. If it will please the committee, I will have Mr. Theall, who is an expert on naval affairs, state to the committee what the borings show where Capt. Winterhalter stated they would locate the dry dock.

Mr. THEALL. The borings are indicated on the map near the proposed site of the dry dock, at 15a and 16a.

Mr. BRITTEN. How many borings were made?

Mr. THEALL. At that particular point, 2. They run up to 16. Sixteen borings were made at that time.

Mr. LEE. How many acres of ground are in the Schmoele tract?

Mr. THEALL. I think 200 acres. There were 16 borings made on the entire Schmoele tract, and in the vicinity of the proposed dry dock apparently 2 were made, 15a and 16a.

15a shows at a depth of 80 feet, about 25 feet is through fine sand, about 22 feet of marsh mud, and about 12 feet of loose broken shell, and 4 or 5 feet of sand again, and at 80 feet is sand with mud.

Mr. LEE. Showing there is no solid bottom at 80 feet on the proposed site of the location of the new dry dock?

Mr. THEALL. Yes.

Mr. LEE. I call your attention to the borings at 3a, which is on the site of the old dry dock, which is not on the Schmoele tract.

Mr. THEALL. 3a is at the end of the present Dry Dock No. 3. That boring shows 6 or 7 feet of fine sand, then about 12 feet of gray sand with clay, then 3 or 4 feet of fine sand again, about 20 feet of marsh mud, and about 10 feet of loose broken shell, then about 10 feet of sand, and about 12 feet of marl. That is at 80 feet.

Mr. LEE. What do you mean by "marl"?

Mr. THEALL. It is a harder formation.

Mr. BRITTEN. Is that what is called hardpan, or is it bedrock?

Mr. LEE. It is not rock.

Mr. THEALL. Then the chart shows where the old dry dock is entirely on Government property that the bottom at 80 feet is all right, but on the Schmoele tract, where they propose to locate the new dry dock, at 80 feet, it is nothing but sand and mud.

Mr. LEE. I simply call attention of the committee to this, because for 35 days I tried to get these maps to show the committee that the board of shore stations refused to do anything until there were more borings made, showing they could get good foundation at that particular point, and for the purpose of saving money for the Government, because we have a dry dock at Pearl Harbor, where they are having trouble with the bottom.

Mr. WILLIAMS. Is that condition at 80 feet true of all parts of that Schmoele tract which are available for dry docks?

Mr. LEE. Yes, sir.

Mr. BRITTEN. What does 4a show?

Mr. THEALL. That is about the same as 3a, apparently, from this sketch. There is not quite as much of marl bottom as 3a.

Mr. BRITTEN. How about 14a?

Mr. THEALL. 14a would be this side of 15a, and about in the same condition as 15a. In 14a you strike the edge of the marl at 80 feet.

Mr. BRITTEN. What is 5a?

Mr. THEALL. Gray sand with clay, and apparently there is no marl bottom there.

Mr. BRITTEN. Mr. Chairman, I think it very important that these borings go in the records of the hearings. I understood from Mr. Lee the hearings had been sent to the Public Printer. These should go in the record.

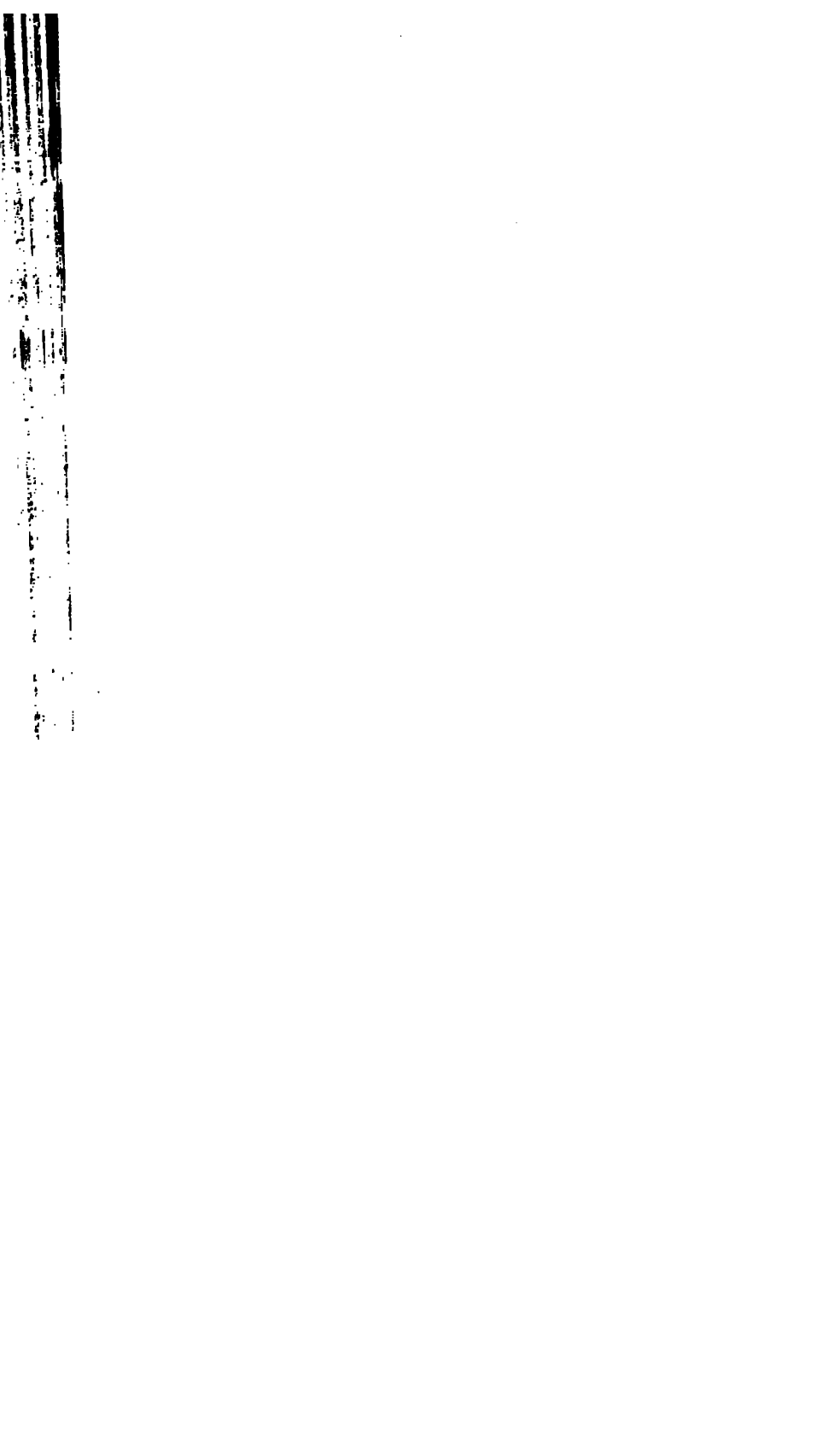
The CHAIRMAN. They will go with the hearing this morning.

Mr. BRITTEN. Will they go in the general hearing?

The CHAIRMAN. Yes.

The committee will now adjourn to meet Friday morning at 10.30 o'clock, and take up the consideration of the bill at that time.

(Thereupon, at 12.30 o'clock p. m., the committee adjourned until Friday, February 20, 1914, at 10.30 o'clock a. m.)



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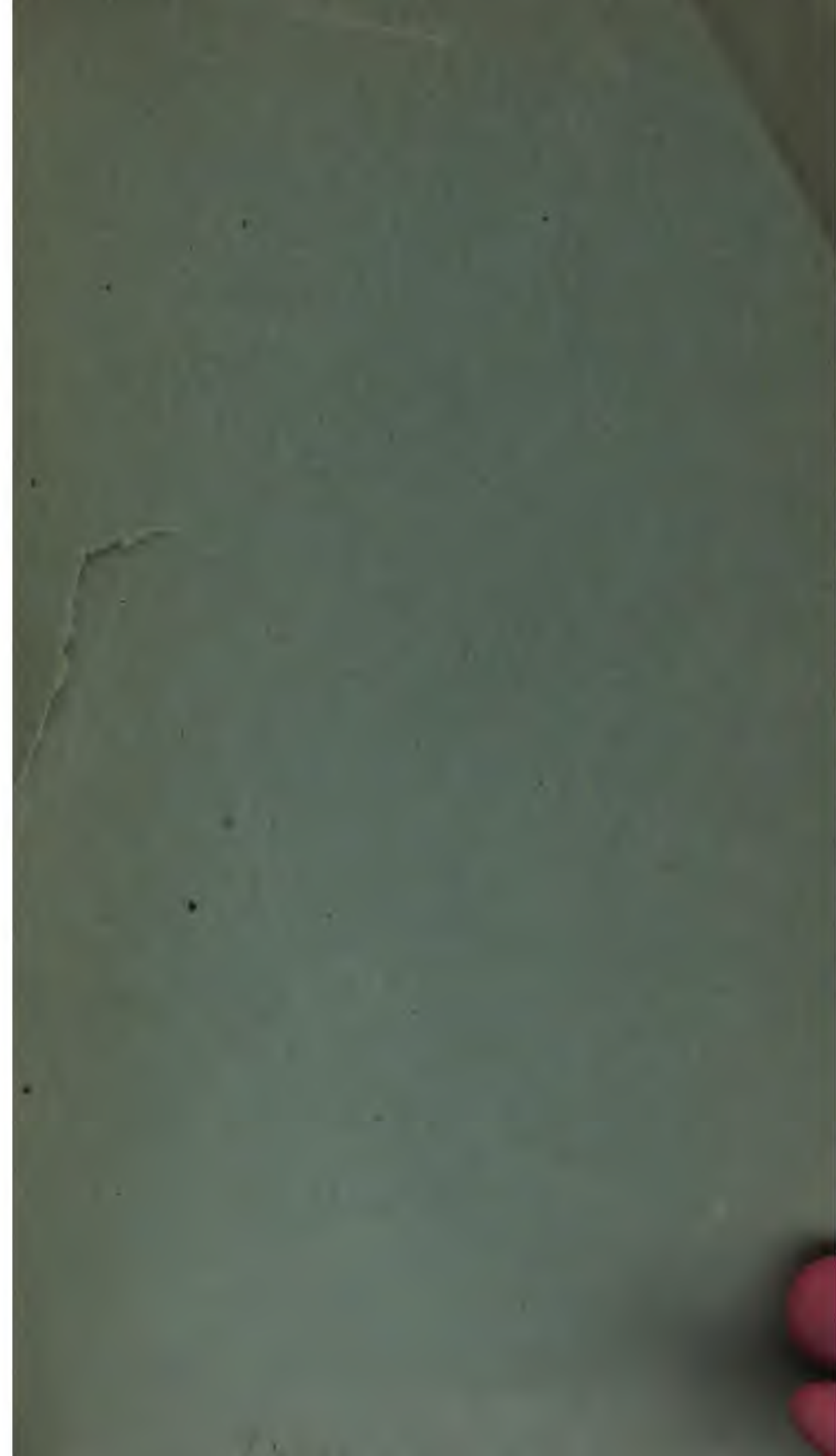
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